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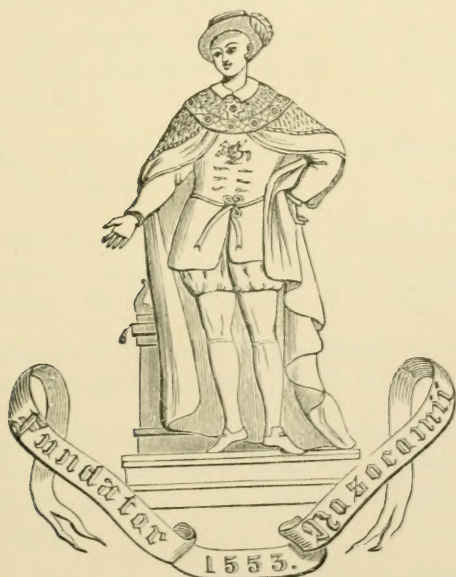


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# OSTEO-ARTHROPATHY AND ITS RELATIONSHIPS.

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THE subject of this paper is a malady which was originally regarded as belonging to acromegaly, but was later on separated by Marie in 1890, under the name of pulmonary hypertrophic osteo-arthropathy, also called secondary hyperplastic ostitis by Arnold and others in Germany. My attention was originally called to the subject by a case under my care which was briefly described in a paper read before the British Medical Association in August, 1895, and which is published *in extenso* at page 105 of this volume.

Some sixty-five cases have up to the present been recorded<sup>1</sup> which are referred, either by their reporters or by others, to this disorder. I have also met with two unrecorded cases, probably of the same nature.<sup>2</sup> Setting apart the more doubtful examples, we may for convenience divide the remainder into two classes according to the presence or absence of obvious bony changes elsewhere than at the ends of fingers and toes. There are thus three groups to be considered :

1. Typical osteopathy, with bony changes and a peculiar form of clubbed fingers.

<sup>1</sup> Including Bamberger's and Thorburn's "heart cases."

<sup>2</sup> Three additional cases were referred to by Mr. Godlee at the Pathological Society (March 19th, 1896).

2. Cases in which only the peculiar clubbed fingers have been noted.

3. A mixed group, including all those cases in which the enlargement of the extremities appears to have been primary, as well as others which are of uncertain nature, whether from insufficient details or for any other reason.

*A typical case* would present the following features :

1. A history of previous thoracic disease.

2. A peculiar form of clubbing of the ends of fingers and toes.

3. Symmetrical bony enlargements, mainly affecting the articular ends of long bones.

4. Effusions and other changes in neighbouring joints, also roughly symmetrical.

5. Slight overgrowth of adjacent soft parts.

6. Other less constant or less frequently recorded features, dermal, neuro-muscular, vascular, urinary, &c.

It will be necessary to consider some of these factors in detail.

*Changes in the finger ends.*—1. Great enlargement of the terminal phalanx or soft parts covering it, both antero-posteriorly and laterally—"drumstick fingers,"—in each of which the distal part becomes the biggest.

2. Hyperextension at the last joint.

3. A series of changes in the nail. This is (1) large and wide, overlapping its bed, and reaching to the lateral borders of the fingers ; (2) strongly curved in both directions and curving over the end of the finger, like a watch-glass or a parrot's beak ; (3) the root long and mobile, raised above the level of the second phalanx, so that it can be felt as a distinct ridge, and when pressed upon yields an elastic or semi-fluctuating sensation, or sometimes a more resistant sensation, while the centre of the nail feels firm and hard ; (4) the body of the nail often striated or furrowed in one or both directions ; (5) the colour bright pink, peach-coloured, or more or less cyanotic ; (6) consistence diminished, so that it readily splits or breaks ; (7) growth abnormally rapid.

It will be noted that these characters are an exaggeration of those met with in lesser degrees in the ordinary clubbed

fingers of phthisis, empyema, or heart disease. And although in parrot-beak clubbing the enlargement is mainly antero-posterior and dorsal, whereas in the more ordinary form it is mainly lateral and palmar, intermediate conditions are occasionally met with. Moreover bone changes in the forearm and leg are sometimes found associated with the ordinary type of clubbing. Marie's description, based partly upon the Gouraud case (No. 11) and that of W. Hagner (No. 2), gives the impression that the nail bed is raised by bony overgrowth; and this may sometimes be the case. But Thérèse and Lefebvre's case (No. 19) and Freytag's case (No. 34), which were typical during life, had no enlargements of the terminal phalanges after death. Arnold's post-mortem examination of the Hagner case showed that there was very little enlargement there; and other accepted cases do not give the impression that bony overgrowth is the chief cause of the peculiar shape of nail and finger end. It is well known that ordinary clubbed fingers are much less marked after death. The same has been noted in some cases of osteopathy, *e.g.* Springthorpe's case (No. 59). Periodical variations in size are also to be found during life both in ordinary and in parrot-beak clubbing (Cases 19, 64), and in each case the enlargement may sometimes be more or less rapidly removed by suitable treatment of the primary disease. We may therefore safely conclude that in both kinds of clubbing the alteration is mainly due to changes in the soft tissues and their vascular supply. Freytag (Case 34) describes dilatation of the capillary loops under the nail with enlargement of the interpapillary processes, but no other alteration in the skin; no sclerosis of corium or subcutaneous tissue; no endarteritis obliterans, and no thickening of nerve-sheaths. In Thérèse's case (No. 19) there was slight hypertrophy of the horny layer, papillæ, and connective tissues of the derma.

The clubbing in osteopathy is usually best marked in the thumb and middle finger, although the index is sometimes as much or more altered than the medius. *In the foot* the big toe is always disproportionately affected. The appearance of the toes is of the same kind as of the fingers, but less characteristic, owing to boot-pressure and other causes.

The *bony changes* have a characteristic *distribution*. The parts affected are the phalanges, which are rendered cylindrical with a slight swelling at the proximal interphalangeal joint; the heads of the metacarpal and metatarsal bones, the lower 3 or 4 inches of the radius and ulna, mainly on the dorsal aspect, the enlargement beginning somewhat abruptly and involving diaphysis as well as epiphysis, and causing a very noticeable increase in the antero-posterior diameter and a smaller increase transversely. The tibia and fibula show a corresponding alteration, but less abrupt and rather more extended; sometimes bony enlargements are found near the elbow-joint, and frequently near the knee-joint; the outer third of the clavicle may be enlarged,<sup>1</sup> the spine and acromion process of the scapula, some of the ribs, and the iliac crests.<sup>2</sup> There is sometimes also disease of the vertebral column, either enlargement of spinous processes, kyphosis, or actual caries, combined at times with scoliosis from the pulmonary or pleural disease. The kyphosis often affects a considerable length of the spine, but is sometimes more localised, as in ordinary caries. Marie had an idea that the kyphosis was more frequently lower dorsal and lumbar, whereas that found in acromegaly was usually upper dorsal and cervical. It would, however, be unsafe to attach much importance to the distinction.

*Histologically* the bone condition varies somewhat in different cases, owing possibly to the stage of the disease, or may be also to diversity of cause. In all the descriptions the main changes are referred to the periosteum and subjacent bone, and appear to be best marked over parts where most change is noticeable during life. But it is noteworthy that they are also sometimes more widely distributed. Thus in Case 25 (Bamberger) nearly the whole surface of femurs, patella, tibia, fibula, metatarsals, radius, ulna, metacarpals, and phalanges of fingers and toes were affected, the

<sup>1</sup> In Rauzier's case (No. 22) and one of Thayer's (No. 62) the inner end of clavicle was more enlarged than the outer.

<sup>2</sup> In one of Bamberger's cases (No. 29) the sternum was extremely tender on pressure. In Case 25 the tarsal bones were voluminous, and in Case 22 both tarsal and carpal bones. Case 2 (Friedreich-Erb) and Case 11 (Gouraud-Marie) both had enlarged superior maxillæ.



least affected parts being the lower end of the femur and upper ends of tibia and fibula, radius and ulna. The periosteum is usually thickened, sometimes adherent, sometimes readily detached and highly vascular. In Freytag's case (No. 34) two layers were readily distinguishable in the thickened periosteum, the deeper one containing bony spicules or imperfect bone, while the older subjacent bone was unaltered. In Case 25 the affected surfaces were covered with soft, red or bluish-red, velvety or warty osteophytes, lamellar in texture, somewhat like the periosteal deposits in some syphilitic cases, while the subjacent bone was either normal or slightly thickened. The osteophytes varied in coarseness, and were sometimes disposed in fine parallel lines, sometimes forming large bony crests exaggerating natural markings, sometimes bossy or warty projections, while in the least affected parts the surface was finely porous. The nutrient foramina were unusually large. The subjacent cortex was thick and sclerosed, this change being especially noticeable in the spongy bone at the epiphyses. Another of Bamberger's cases (No. 23) merely showed regular thickening and sclerosis of the cortex and epiphysial spongy bone, and Rauzier's case (No. 22) was similar in this respect. Perhaps these represent a slight attack in a later stage. In Thérèse's case (No. 19), described by Lefebvre, the thickened periosteum covered a lamellated deposit of soft new bone in several layers, containing externally no Haversian canals, but a number of flattened channels at right angles to the surface; beneath this irregular bone spaces with medullary tissue containing abundant embryonic cells; and more deeply still a layer of dense bone with enlarged Haversian canals, a similar layer being found next the medullary cavity. The marrow in the medullary cavity was fattily degenerated in the centre, embryonic in character further out. This probably represents a recent stage.

It is noteworthy that whereas the terminal phalanges in Bamberger's case (No. 25) showed warty excrescences on both fingers and toes, those in Freytag's and Thérèse's cases (Nos. 34 and 19) showed no such projections, but were merely porous (Case 19). I omit the histology of Erb's

case, which appears to me not to be typical (see Case 2). A piece of affected bone from Thérèse's case was submitted to *chemical analysis* by Chabrié, who found an increase of organic matters, especially fat, and a considerable increase in magnesium phosphate at the expense of the calcium phosphate and carbonate. These results differ markedly from those published of bones in rickets, osteomalacia, and Paget's *ostitis deformans*; but more analyses are required before one can be sure of their significance.

*Clinically* these bone lesions are characterised by comparative absence of pain or tenderness, which are usually only marked where the bones are growing rapidly. The onset may be insidious, with slow, painless enlargement, or very rapid, when decided changes may be noticeable within a few weeks or days, and more pain is usually present at first. A tendency to paroxysmal enlargement has been noted, with stationary intervals.<sup>1</sup> One remarkable feature is the complete absence of any tendency to softening or suppuration, and the consequent absence of adhesions, sinuses, or inflammatory redness over the affected areas. This is very different from what obtains in ordinary tubercular bone lesions, which, moreover, show a different histology and different distribution. The only exception is to be found in the kyphosis, which may sometimes show the ordinary characters of spinal caries, with which it may in such cases be identical. The order of involvement varies, the hands and wrists being sometimes first affected, sometimes the ankles and feet, sometimes both simultaneously.<sup>2</sup>

The *articular lesions* are of a similar sluggish character, and take the form of painless effusions into joints, or of

<sup>1</sup> Cases 7, 22, 35, 38, 49, 61, 62, were apparently gradual and painless in onset; Case 19 gradual with painful exacerbations; Cases 18 (four days), 8 (three weeks), 54 (three weeks), 9, 16, 17, 41, 64, had a rapid onset. In Case 63 the enlargement was gradual, painless in ankles, painful in wrist and knees.

<sup>2</sup> According to Lefebvre the order of frequency is as follows:—Ungual phalanges of hand and foot; articular ends near wrist, those near ankle; metacarpo-phalangeal, medio-tarsal, elbow, knee, sterno-clavicular, and intervertebral joints. If only clinically recognisable enlargements are counted, it appears to me that he under-estimates the frequency of enlargements near wrist, ankle, and knee

synovial and periarticular thickenings, with no tendency to form pus, and very little to soften or break down. As already mentioned, the articular bone ends are usually enlarged, and all these changes contribute to limit the mobility of the joint, which may yield crackling sensations on manipulation. There is usually no acute pain or tenderness excepting in the cases with acute onset, and no migratory tendency as in true rheumatism. So also the tendency to lipping of articular ends characteristic of arthritis deformans is absent in this disease; and the tendency to increased mobility shown in Charcot's disease is also not found here. The effusions may appear pretty quickly, but are slower in subsiding. The joint changes are usually associated with periarticular thickening, which also extends over the enlarged bone areas. This in the upper limb is free from œdema, but there may be slight œdema about the ankles, which are shapeless and swollen, bulging on either side of the malleoli. Varicose veins are common.

In some of the cases, *e.g.* Rauzier's (No. 22) and Thorburn's (Nos. 49 and 50), the joints resembled white swellings, but without the tendency to progressive disorganisation which these usually present. In Cases 22 and 49 there was erosion of cartilages. In Case 25 these were normal, and in Case 19 there was a little vacuolation in the deep layers in one place, elsewhere no change. Very few complete histological descriptions are on record.

The joints most frequently affected are the wrists, ankles, and knees, less frequently those of hands and feet, elbows and shoulders. In Case 22 the sterno-clavicular joints were enlarged. The changes in the finger-joints mainly consist in bony enlargements of the proximal interphalangeal joints; the metacarpo-phalangeal joints are also frequently affected, and corresponding joints in the feet. The palm of the hand is usually overgrown so as to encroach upon the fingers; whereas dorsally the latter appear to enlarge at the expense of the metacarpo-phalangeal region—an exaggeration of the natural relations of the part.

During the progress of a case considerable improvement may be noted in the joints and their surroundings; as in my own case (No. 64), where mobility and usefulness of the



limbs were to a great extent restored, and the bony enlargements above wrists and ankles markedly reduced in the course of eleven months, with a more rapid reduction of the soft parts.

The *muscles* in this disease are usually somewhat wasted and feeble, but not equally so, those of the upper arm and thigh being markedly affected, and contrasting with those of the forearm and leg, which are relatively well preserved.

The *skin* is usually not hypertrophied; it is tightly stretched and thin over the enlarged parts (especially over the fingers), its folds not being exaggerated as is the case in acromegaly. The coarse hairs are usually ill-developed on the trunk and over the terminal enlarged parts, which latter are often bounded by an overgrowth of hairs. Perspiration is often excessive from the affected extremities. Pigmentation has also been noted over the same areas, and various other skin changes elsewhere, such as xeroderma or ichthyosis, and urticaria.<sup>1</sup> In Thérèse's case there was an entire absence of connective-tissue hypertrophy from the thickened soft tissues, contrasting with what is found in acromegaly.

The *nervous system* has sometimes shown profound changes, e. g. in Sollier's case (No. 9); although in many others nothing abnormal has been noted (Cases 19, 22, 10, 41, 64). In Saundby's case (No. 8) there was numbness in the hands, but no anæsthesia; increased muscular irritability; increased superficial reflexes, and absence of patellar and bicipital reflexes. In Sollier's case exaggerated tendon reflexes and muscular irritability, and disseminated patches of altered sensation to heat, cold, pain, and touch; vertigo, slightly defective power of finding tip of nose with eyes shut; defective pressure sense, lightning pains felt always simultaneously in all four limbs, but no visceral crises, and no Romberg's or Argyll Robertson's symptom. In Gerhardt's case there were tremors and paresis, with muscular atrophy (the thyroid was atrophied post mortem). In one of

<sup>1</sup> Pigmentation was present in Cases 8, 18; ichthyosis or keratosis in Cases 9, 18, 59, 64; urticaria in Case 35; excessive perspiration from affected parts in Cases 9, 16, 19, 22 (when doing fine work), 43, 64; multiple naevi in Case 16.



Lefebvre's cases (No. 18) there was sense of burning heat in the feet, vertiginous attacks, sight slightly feeble for distant objects, occasional fits of absence, queer notions, slight deviation of the tongue, athetosis of the toes of one foot, and "tremors of debility." In Waldo's case (No. 12) cavities were found in the brain. In Case 35 there were tingling and numbness in the fingers, cramps in calves and thighs, especially at night, sensation of cold in the hands and feet, sometimes when perspiring freely and hot all over, but no defect of special senses, and all kinds of general sensibility preserved. In Möbius's case (No. 39) there was neuritis of one ulnar nerve, and the parrot-beak change was limited to the region supplied by it. In Thérèse's case (No. 19) the radial nerve appeared to be quite sound.<sup>1</sup>

In many cases abnormalities have been noted in the *ductless glands*, although there is no instance (unless we accept Posmantir's case) in which the hypophysis cerebri has been found enlarged after death—an almost constant condition in acromegaly. The thyroid gland was diseased in Cases 8 and 25 (small, colloid), 10 (absent), 16 (atrophied), 17 (apparently absent), 13 (small), and 56 (enlarged). The thymus was absent in Cases 10 and 59. The spleen appeared to be enlarged in Case 64. There is no evidence of constant changes in the lymphatic glands; such changes as are found depend upon the primary disease.

The *blood* was abnormally fluid and poor in Hb in Case 64, but appears to have been normal in Cases 43 and 63; there was deficient Hb in Case 62.

The *urine* has several times presented abnormalities. In one of Lefebvre's cases (No. 18) there was, at a late stage, decided diminution of urea and phosphates, and transient albuminuria probably from organic renal disease. In Case 20 there was copious albuminuria attributed to lardaceous disease. Legrain states that in his case (No. 55)

<sup>1</sup> In Legrain's case the visual fields were contracted, papillary vessels slightly contracted, fundi pigmented, with commencing staphyloma in one eye; patellar reflexes abolished (No. 55). This case was, however, probably not osteo-arthropathy. In Posmantir's case (No. 56) the patellar reflexes were abolished. There was hyperæsthesia in fingers (?), but no alteration in touch or temperature sense. The pituitary body was found to be enlarged after death, but no note is given as to the sight. This case was probably acromegaly.

there was double the usual proportion of lime salts without any increase in magnesia salts ; but I regard this as a case of acromegaly. Rauzier's case (No. 22) showed increase in quantity with low specific gravity. My own case (No. 64) had on several occasions a remarkable diminution in the daily quantity, and in urea, with deposit of lithates and oxalates. In Redmond's case (No. 17) there was excess of phosphates. Case 36 also showed slight albuminuria ; Case 43 diminution of phosphates and urea, with a trace of albumen. In Case 13 (not quite typical) there was towards the end a great diminution in urea, chlorides, and phosphates.

The *genital organs* present no enlargement and no constant changes. Functional incapacity or inactivity is usually present ; but that would be expected wherever the system is much exhausted by long illness. In Posmantir's case the left testicle was atrophied ; but this is a doubtful case.

The condition of the *heart* and *lungs* will be considered with the ætiology. Here it need only be mentioned that the former was often and the latter were almost invariably affected, and that in several cases the veins were either dilated and varicose or thickened. According to Lefebvre the arteries and veins at the wrist in Thérèse's case (No. 19) were normal under the microscope.

*Diagnosis.*—Where only the finger ends are affected it will be necessary to distinguish osteo-arthropathy from *ordinary clubbing* of heart and lung disease. The relation which these bear to one another will be considered later on. Ordinary clubbing may also be associated with other forms of bone and joint disease. *Chronic rheumatism* of the smaller joints will be distinguished by the history and effects of treatment. *Rheumatoid arthritis* causes more distortion, and gives rise to lipping and nodular projections near the affected joints, which are altered in shape in a more or less characteristic manner. The conditions grouped together by Bouchard under the name of *pseudo-rheumatism* require consideration. They usually come on in the course, or as a sequel of some well-marked febrile disease, such as scarlatina, variola, typhoid fever, gonorrhœa, or pyæmia. They are fixed and oligo-articular, unlike acute rheumatism ; are more liable to affect large joints than small, and are frequently

asymmetrical. Sometimes they cause acute pain and tenderness with little local change ; at other times there is well-marked effusion with the usual signs of inflammation ; in other forms the inflammation is mainly periarticular, in which case it more nearly resembles osteo-arthropathy. The effusions are frequently purulent, and may end in ankylosis or disorganisation. All the attendant circumstances will have to be reviewed in doubtful cases. Symmetrical bony overgrowth would be in favour of osteo-arthropathy. *Gout* will seldom cause much difficulty, as its lesions are usually associated with tophi or other discoverable uratic deposits, and are often unsymmetrical, while a history of a typical acute attack brought on by dietetic causes will be conclusive (see Case 58). Here, again, bony overgrowth is unusual, and when present is apt to simulate rheumatoid arthritis (see Duckworth on Gout). *Tubercular ostitis* and *arthritis* will be distinguished by the presence of signs of inflammation, and often by want of symmetry ; and in later stages by a tendency to disorganisation and involvement of skin. It is quite possible that sluggish tubercular inflammations may sometimes accompany osteo-arthritis ; but it is extremely improbable that many finger tips would be symmetrically involved in tubercular inflammation.

*Syphilitic* bone and joint lesions are sometimes more difficult to distinguish. Two cases have been recorded as osteo-arthropathy in which syphilis appears to have been the cause without any thoracic trouble. One (Case 40) appears to be absolutely typical. The other (Case 4) is different in many respects, and probably distinct. Syphilitic hyperostoses affect chiefly the diaphyses of long bones.

Osteo-arthropathy has also been compared with *myxædema*, but even apart from the bony changes (which are absent in the latter) the differences are far more striking than the resemblances. It is singular that a case of acromegaly, which undoubtedly does resemble osteo-arthropathy, has been recorded as *myxædema*.

Bony enlargements associated with œdema and *malignant disease* may sometimes be puzzling, but a careful study will probably reveal striking differences (see Cases 5, 8, 10). *Elephantiasis* sometimes causes enlargement of bones, but



it is usually unsymmetrical and associated with chyluria, &c. *Congenital hypertrophies* will have to be distinguished from osteo-arthropathy in early life (see Case 53). *Ostitis deformans* presents no clinical resemblance to osteo-arthropathy. The spine is always bowed, but the skull is enlarged, and the diaphyses of the long bones lengthened and curved; the finger ends and joints are not altered.

*Acromegaly* is probably the disease which bears the strongest resemblance to osteo-arthropathy, and the two were originally confounded by Marie himself. The main points of distinction are as follows:

1. *Acromegaly* comes on gradually in apparent health, especially at and after puberty (fifteen to twenty-five). *Osteo-arthropathy* comes on after empyema or other chest affection. It may begin rapidly or insidiously, and show remissions and exacerbations, whereas in *acromegaly* the growth is steady and continuous. *Acromegaly* is thus regarded as a primary, osteopathy as a secondary disease. When, however, the cause of the former has been discovered, the distinction may turn out to be of little importance.

2. The enlargement in *acromegaly* does not destroy the shapeliness of the enlarged part, at all events until a late stage; whereas in *osteo-arthropathy* there is a distortion from quite an early stage. This is because in the latter the main alteration takes place about certain joints and the tips of fingers and toes. Whereas in *acromegaly* the whole hand or foot is equally affected, or the metacarpal region more than the fingers, in osteopathy there is enlargement of finger ends, phalanges, and proximal interphalangeal joints, heads of metacarpal bones, and large epiphyses next wrists and elbows; while the shafts of metacarpals, radius, and ulna between these points are relatively little affected. There is a corresponding distribution in the lower limb, in which ankles and knees are large, legs and thighs for the most part small. In *acromegaly* the phalanges, although large, are flat as in health, whereas in osteopathy they are cylindrical, and appear to be lengthened out of proportion to the palm of the hand, while the terminal segments are large and bulbous. In *acromegaly* the nails are normal in appearance,



and in proportion to the size of the finger, or rather smaller than larger. In osteopathy they are enormous, and strongly curved over tips and sides of the fingers.

3. In acromegaly all the tissues are hypertrophied together in the affected parts, bone and soft tissues in proper proportion. In osteopathy the enlargement is mainly bony, the soft tissues of the fingers being only affected at the tips. There is usually more dorsal than palmar swelling, both of soft tissues and of bone; and in the later stages the soft tissues may waste while the bones continue to grow.

4. In acromegaly joint affection is stated to be exceptional, and when present takes the form of arthritis deformans. In osteo-arthropathy joint affections are extremely common, and show themselves either as simple effusions or else as periarticular thickening.

5. In acromegaly the face is affected, the tongue and lower jaw enlarged. In osteopathy these parts escape.

6. In acromegaly the external genitals, cartilages of ears, eyelids, nose, and larynx are enlarged, whereas in osteo-arthropathy these parts escape.<sup>1</sup>

7. In acromegaly the upper dorsal and cervical region of the spine is mainly affected, whereas in osteopathy it is usually the lower dorsal and lumbar region. In acromegaly the sternum is thickened and enlarged; in osteopathy this does not usually happen.

8. Enlargement of the hypophysis cerebri with symptoms of cerebral tumour and of pressure on optic tracts is the rule in acromegaly, but has been uniformly absent in osteo-arthropathy.<sup>2</sup>

9. Acromegaly proves fatal by its intra-cranial changes; osteopathy need not prove fatal unless the associated lung trouble causes death.

10. In acromegaly there is increase of fibrous tissue around peripheral nerves, spinal ganglia and sympathetic, enlargement with thickening of most of the arteries, and hypertrophy with fibrous increase in the derma and subcutaneous tissue. The sweat-glands are hypertrophied, the skin-folds deep and well marked. Similar changes are found in the

<sup>1</sup> Exceptional cases, Nos. 8, 38, 53, 2, 6, 11, 42.

<sup>2</sup> Unless we accept Posmantir's and Legrain's cases.

mucosa, submucosa, and intermuscular connective tissue of the tongue, soft palate, and larynx. In osteo-arthropathy these changes do not appear to take place.<sup>1</sup>

On the other hand, there are many *points of agreement*. In both we find—

1. Overgrowth of bone and soft tissues without evidence of decided inflammation.

2. Muscular atrophy and degeneration without paralysis.

3. Changes in sensation, excessive perspiration, pigmentary and other skin changes.

4. The ends of the limbs hypertrophied, some part of the spine or some the ribs.

5. Vascular and respiratory organs affected, either previously or subsequently to the changes in the extremities.

6. Rough thickened bones with large vascular channels.

7. No elongation of bones, excepting the lower jaw in one and possibly the phalanges in the other.

8. Bilateral symmetry.

These points of agreement warrant us in suspecting a common mechanism, though not necessarily a common cause. The differences, however, are sufficiently well marked to enable us to readily distinguish typical cases of the two complaints.

There is, however, a small group of cases<sup>2</sup> which seem to occupy an intermediate position. One of these, the Gouraud-Marie case (No. 11), was the subject of Marie's original description.

The main characters of this group are as follows :

1. There is no clear history of previous lung disease.

2. The face, facial bones, and tongue may be affected, and there is more swelling of soft parts than is usual in osteo-arthropathy.

3. The histology (judging by Case 2) agrees with that of acromegaly.

<sup>1</sup> In the elder Hagner (Case 2) similar changes were found, but Arnold regards this as a case of acromegaly, I think with reason.

<sup>2</sup> Nos. 2, 3, 6, 11, perhaps also 42, 51, 12. In Cases 55 and 56 we seem to have the appearances of osteo-arthropathy with enlargement of the hypophysis cerebri. Case 14 (Renner) probably also belongs to this group.

On the other hand :—

4. The limbs have the appearance of osteo-arthropathy, large curved nails, clubbed finger ends, bony enlargements near the joints, and similar deformities in the lower limbs.

5. There is no evidence of enlargement of the pituitary body or of pressure on optic tracts, and the lower jaw is usually unaffected.

6. The genitals are not enlarged.

The disinclination of some German authorities to recognise osteo-arthropathy as clinically distinct has, I believe, largely arisen from the accident which caused Marie to choose one of this group for his original description, instead of a representative of the more numerous ordinary type. Every one of these cases has been disputed, some regarding them as acromegaly, others as osteo-arthropathy. Those who still regard them as osteo-arthropathy will have to abandon the view that the latter is necessarily secondary to lung disease.

Hypertrophies of the extremities are also met with in *syringomyelia*, which roughly resemble acromegaly and osteo-arthropathy. The hands and fingers in one of these cases (that of Holschewnikoff<sup>1</sup>) were enlarged but in good proportion. The nails strongly curved from side to side and longitudinally furrowed and inclined to split, but not enlarged. The skin of the hand thickened and cleft, but not adherent. Increased mobility at some of the metacarpophalangeal joints, and some extra-articular exostoses. Feet plump, with very broad soles and massive toes. The usual condition was found in the spinal cord; hypophysis cerebri normal; peripheral nerves connected with the hypertrophied parts degenerated. During life there would in such conditions be found a dissociation between the different forms of sensation, with a loss of the sense of pain and temperature. It will be noted that the joint changes resembled those of Charcot's disease, but were less advanced, and affected the smaller joints. The rhagades remind one of incipient perforating ulcers but for their position.

*Erythromelalgia* is characterised by enlargement of fingers, but these are largest at the base, livid and wanting in

<sup>1</sup> 'Virch. Arch.,' 1890, cxix, p. 10.

sensation. There is a tendency to hæmorrhages and gangrene. The lividity may extend up the arm, and be associated with kyphosis and a notable diminution in the sense of position. It is unlikely that it should be confounded with osteo-arthropathy. There is probably no true hypertrophy in such cases.

Hypertrophy of extremities has also been met with in several *other nerve lesions*, *e. g.* in hemiplegia, neuralgia, neuritis, and excision of nerves. These are mainly interesting for the light they throw upon the nature of the disease, and are unlikely ever to be confounded with osteo-arthropathy.

*Ætiology.*—Deducting fourteen doubtful cases (Class III) from the sixty-seven reputed cases on which this paper is based, there remain fifty-three,<sup>1</sup> of which twelve belong to Class II, in which only the ends of fingers and toes appear to be affected.

*Age and Sex.*—The youngest case on record is Field's (Case 53), a boy of about one year old, seen at seventeen months. The oldest were Gerhardt's (No. 16) and Marina's (No. 41), both of whom were over sixty when the swelling began. If we include all of Bamberger's cases the numbers are fairly evenly distributed up to about fifty years, after which they become less frequent. Taking into account the numbers living at various ages, this probably indicates that the tendency steadily increases with increasing age. Most of those in Class II were children. As regards sex we find an overwhelming proportion of males (Class I, three female to thirty-seven male; Class II, three female to six male). Only one of the females (Case 17) was affected during menstrual life, the rest being before the establishment or after the cessation of menstruation.

*Thoracic antecedents.*—The vast majority were preceded by some kind of lung disease. The possible exceptions were six in number, as follows.

Case 13.—Acute rheumatism sixteen years previously. Signs of early pulmonary tuberculosis on examination, regarded by Marie as the cause, but considered by the

<sup>1</sup> Since this paper was written Mr. Godlee referred at the Pathological Society to three more cases (May 19th, 1896).



reporters to have been subsequently developed, as the attack had begun three years before, and the lung trouble was quite recent.

Case 32.—Aortic insufficiency from ulcerative endocarditis ; old pleuritic adhesions.

Case 33.—Pulmonary stenosis and aortic insufficiency, with only the congestion of lungs which usually accompanies such lesions.

Case 40.—Syphilis ; no evidence of thoracic disease.

Case 48.—Attributed by Marfan to pycelonephritis ; no evidence of thoracic disease.

Case 52.—Mitral stenosis with slight pulmonary congestion.

Cases 13 and 40 seem to have been quite typical in appearance. The clinical description of the other cases is too brief to determine their position.

The kind of lung trouble was as follows :—In eighteen there had been empyema or pleuritic effusion, with or without tubercle ;<sup>1</sup> in fourteen chronic bronchitis or bronchiectasis ;<sup>2</sup> nine were phthisical without having empyema ;<sup>3</sup> two had had pneumonia (Cases 17, 41) ; two were suffering from malignant disease of the chest (Cases 8, 10) ;<sup>4</sup> one had a complication of visceral lesions due to congenital syphilis, including gummata in the liver, extensive adhesions and thickenings in the peritoneum, a puriform mass in front of the uterus, and an abscess cavity containing caseous matter in the lower lobe of the right lung (Case 43) ; one a pulmonary abscess communicating with a cavity in the spine, together with pleural effusion (Case 35) ; and one a caseating mass in lung together with aortic stenosis and other visceral changes (Case 12). In this enumeration each case is referred to what appears to be the most prominent lesion ; but some might have been put into a different group with almost equal propriety.

<sup>1</sup> Cases 9, 18, 22, 38, 54, 57, 59, 61, 62, 63, 65, 1, 15, 20, 37, 44, 45, 46.

<sup>2</sup> Cases 16, 23, 24, 25, 26, 27, 28, 34, 36, 39, 60, 64, 21, 47, 53.

<sup>3</sup> Cases 7, 19, 25, 29, 30, 31, 49, 50, 66. Case 25 had bronchiectasis as well as tubercle.

<sup>4</sup> Sarcomatosis also seems to have been present in Case 5, but this may not have been a typical case.

*Heart.*—In addition to the three cases in which there was heart disease without any active lung disorder, a certain proportion of the lung cases had also cardiac disease. In Case 12 there was aortic stenosis with caseating pneumonia; in Case 30 there was pulmonary stenosis with tuberculosis; in Case 31 aortic insufficiency and tubercle; in Case 25 dilated and hypertrophied right heart, chronic and subacute tuberculosis, pleural adhesions, and dilated bronchi; in Case 34 dilated and hypertrophied heart, pleural adhesions, and bronchiectasis; in Case 39 feeble cardiac action, left side of chest fixed with dulness, rhonchi, and bronchial breathing over base, probably due to pleuro-pneumonia; in Case 59 adherent pericardium, large, flabby, dilated heart, and right empyema; in Case 64 heart permanently displaced to left, action very frequent, a rigid chest with thickened pleuræ and quiescent tubercle, probably also bronchiectasis; in Case 54 heart slightly displaced downwards and to the left. On the other hand, in Cases 19, 22, 43, the heart was found to be normal after death, and it appeared to be so in Cases 18, 49, 50, 57, and perhaps in others. Heart disease is, therefore, not an essential for the production of the deformities. Moreover these were not so well marked in the purely cardiac cases.

Is the *presence of pus* necessary? That it was present either alone or as muco-pus in nearly all the cases is evident from what has already been said. The only clear exceptions were the heart cases (Nos. 32, 33, and 52) and Case 40, in which there was a history of syphilis but apparently no heart or lung disease. No post-mortem examination of this case has, however, been published, and as syphilis has a tendency to form lowly organised tissue with little vitality, the exception may be more apparent than real. Syphilis can replace suppuration as a cause of lardaceous disease; so also perhaps as a cause of osteopathy. Bamberger had a theory that the bone lesions depended on the presence of *fætid secretions* in the chest. But this cannot be correct, as in my own case (No. 64) the patient expressly denied that the sputa had ever been offensive, and they were certainly not so while he was under observation. Moreover it would have surely been mentioned if this condition was present in other

cases. The relation to *tuberculosis* demands more consideration. Thorburn suggested that the bone and joint lesions were probably a mild form of tubercular inflammation, in which the system was successfully withstanding the disease. He does not make it clear whether he expected to find the tubercle bacillus in the affected structures, or merely regarded the inflammation as caused by the absorption of tubercular toxins. The former is highly improbable, as the lesions do not agree in their distribution and histology, and show no tendency to break down or to involve the derma. Many cases are on record in which from thirty to sixty bone and joint lesions have been present, and yet not one of these lesions has shown the characteristic tendencies of tubercular troubles. Then, again, with such multiple lesions, how is it that the seats of election of tubercular osteitis are not predominantly affected, and often escape? And how are we to account for their symmetry? Thorburn compares the condition to some cases of lupus, but even benign lupus shows nodular growths.

The second hypothesis is more reasonable, although I believe it only contains half the truth. Many of the cases showed no signs of tubercle, and Bamberger expressly states that several of his were non-tubercular, and were proved to be so after death (Nos. 23, 27, 33). The same is true of Freytag's case (No. 34).

Ewald's case proved to be extensive carcinosis without any tubercle (No. 10). In Rauzier's case (No. 22), which also was examined after death, no tubercle was found, and no heart disease, and the disease had been present for years without cachexia, although it is true the periarticular condition at wrists was suggestive of tubercle. In Case 43 the lesions found were those of congenital syphilis, and it seems quite unnecessary to assume that the abscesses in lung and pelvis were tubercular. In Case 59, where death took place after great emaciation, empyema was found, but no tubercle. Had the empyema been tubercular they would surely have found tubercle elsewhere in an unmistakable form. Thorburn's heart case (No. 52) is another case in point, and we may add two of Bamberger's heart cases (32, 33). Other cases are also recorded in which there was no evidence of



tubercle during life, but they are less conclusive in the absence of a post-mortem examination.

Then, in the next place, a case is on record where empyema and early tubercle of lungs were present together, and where the deformities nearly disappeared on curing the empyema, although the tubercular signs remained (Case 36). In another case the lesions were apparently due to an empyema started by pneumococci (No. 45). Several other cases also seem to have been pneumonic in origin. And if we are to accept the case referred to by Marfan (No. 48) the condition here appears to have been due to pyelonephritis from *Bacterium coli-commune*. Thorburn refers to the frequent presence, near undoubtedly tubercular bone and joint lesions, of osteophytic growths exactly resembling those found in osteopathy. But such growths are also found in cases without any suspicion of tubercle. We may, therefore, conclude that tubercle as such is not a necessary antecedent.

The case for *syphilis* is a much weaker one. Two well-marked cases appear to have been caused by this disease. In Schmidt's case (No. 40) there was no post-mortem examination, so that heart and lung troubles may after all have been present. The bone and joint changes took place during the tertiary stage of the acquired disease, and were cured by KI, as also a syphilitic ulcer of the tongue which appeared subsequently. In Chrétien's case (No. 43) there was also lung disease, impeded heart action, and a pelvic abscess. The deformities appeared in a late stage of the congenital disease, and were uninfluenced by treatment. Case 16 also had a history of syphilis. Smirnoff's case (No. 4) was not typical, and cannot be safely included. Case 55, another doubtful case, was also probably syphilitic.

*Vascular conditions.*—Bamberger's and Thorburn's heart cases show that heart disease may cause not only clubbing, but also bony enlargements indistinguishable from those of osteopathy, but for the most part sparing the smaller bones. It is not yet proved that characteristic osteopathy, with the parrot-beak clubbing as well as bone changes, can result from heart disease alone; but even if the two conditions are not identical, they must be very closely related. Apart from hypertrophic bone changes the two kinds of clubbing differ



only in degree, so that the mode of production of the commoner should throw some light on that of the less usual deformity. Ordinary clubbing consists in congestion with overgrowth of the less important tissues—or, as Dr. Acland once put it in conversation, it is “a case of forced feeding.” To produce the capillary tension required for such a result, there must be a fairly strong heart, fairly good nutritive supply and digestion, uncontracted arterioles, and moderate fulness of the vascular system. Slight venous obstruction would tend to increase the capillary tension, provided the heart was strong. A similar explanation would also account for the bony hypertrophy. It is highly probable that minor degrees of bone change, not clinically recognisable, are commonly associated with clubbing of toes and fingers. Systematic skiagraphy would perhaps throw some light on this. Ordinary clubbing may, however, not be solely a mechanical result, as it is sometimes absent where there appears to be a high degree of long-continued obstruction in the chest, and where one would expect to find it on the mechanical theory. The bony clubbing may be partly a reflex result of imperfect oxygenation of the blood. One would expect a physiological sympathy between blood aëration and the activity of the blood-forming organs, of which red marrow of bone is one.<sup>1</sup> In this case the capillary congestion would be arterial rather than venous; and this is supported by the fact that in phthisis the clubbed finger ends are often of remarkably good colour, quite free from cyanosis. However this may be, it is quite clear that in the early stages of osteo-arthropathy an active congestion of the finger tips has frequently<sup>2</sup> been present, possibly in all cases; this congestion has in several recorded cases increased and decreased *pari passu* with the amount of secretion from the pleura<sup>3</sup> or from a tubercular lung;<sup>4</sup> and the same thing has been noted by Mettenheimer and myself in cases of ordinary

<sup>1</sup> The bone changes in osteopathy occur mainly in parts distant from the heart and rich in spongy bone; the clubbing in distant ill-supported parts with a relatively large outer surface.

<sup>2</sup> Cases 7, 10, 15, 37, 45.

<sup>3</sup> Cases 15, 37, 45.

<sup>4</sup> Case 7.

clubbing. It is, therefore, probable that both the latter and the changes of osteo-arthropathy are partly due to humoral causes, not necessarily identical, but at all events closely related.

The vast majority of cases of osteo-arthropathy have followed either empyema or bronchiectasis, and most of the remainder have come in the course of phthisis—all three conditions in which retained secretions are present; and the preponderance of the first two may be explained by the greater facility for absorption afforded. We have in empyema a huge serous cavity filled more or less tensely with purulent secretion, with highly vascular walls; at the same time there is stagnation from imperfect movement of chest walls, and hindrance to the passage of blood through the lungs—both of them conditions which prevent the due oxidation of waste matters. In bronchiectasis we have a very similar condition, excepting that the accumulation is not in a lymphatic sac; and there is usually either emphysema or thickened pleura, which hinders aëration of the blood. The only other large collection of pus which is stated to have led to osteo-arthropathy is Marfan's case (No. 48), in which there was pyelonephritis. There is, however, no detailed description of this case.

There is evidence in several cases that the *blood* is changed in osteo-arthropathy. Urticaria, which is noted in several cases, has been shown by Wright and others to depend not only upon nervous but also on humoral causes, and to be often associated with an abnormally fluid state of the blood, whether from the presence of peptones, the excess or deficiency of calcium salts, or other causes. It is tempting to connect this with the chemical changes in bone and urine noted by Lefebvre and Legrain; but it would be unsafe to generalise from so few data, especially as the latter case is a doubtful one. In Orillard's case (No. 35) attacks of urticaria corresponded with diminished extensibility of elbows and increased swelling of finger ends. In my own case (No. 64) the blood was very fluid, and deficient in red corpuscles and hæmoglobin. If the deformities are due to the absorption of a poison the condition of the excretory organs should influence the result. And it is noteworthy that the kidneys

have been affected in several cases (12, 18, 20, 36, 43, perhaps 64).

So little is known of the *ductless glands* that their influence in the production of osteo-arthropathy cannot usefully be discussed. It is, however, highly probable that they are in some way concerned.

The state of the *nervous system* must also be considered. Just as urticaria is markedly under the influence of the nervous system, so also this abnormal swelling of finger tips and other parts has been shown to depend on nervous influence. Not only have various nervous symptoms been noted in recorded cases, such as neuralgic pains, sensation of heat, tingling, &c., but in one remarkable case (No. 39) ordinary clubbing was converted on one side into osteopathy apparently by an injury to the nerve supplying the part. In this case a locksmith aged fifty-one, who had had pneumonia eight years before but had apparently completely recovered, was taken ill in December, 1891, with a bad cough, profuse perspirations, and debility. After some weeks the sputum became foetid, but the general health improved. In January, 1892, he had pains in the right little finger and the same side of the fourth finger, which increased and went up to the elbow, disturbing his sleep. About a week before the pain the fingers had become thickened. In February the pains were better but the hands weaker and more useless, so that he sought medical advice. On examination there was neuritis of the right ulnar nerve with paresis of parts supplied by it, and parrot-head clubbing of the fourth and fifth fingers of the right hand. All the other fingers of both hands showed ordinary clubbing. The chest was rigid on one side from the results of old pleuro-pneumonia. When questioned he remembered that in the previous November a heavy iron plate fell on to the fourth and fifth fingers of the right hand.

Here a neuritis converted an ordinary clubbing into a condition apparently identical with osteo-arthropathy. However, it is pretty plain that if osteo-arthropathy is due to a nerve lesion, this is not usually a neuritis or polyneuritis. Any other lesion producing long-continued dilatation of arterioles would be competent to produce the peripheral



changes, and although it is highly probable that a nervous mechanism is involved, the hyperæmia might well be sub-inflammatory and due to a humoral cause. Bone and joint changes are sometimes due to central nerve lesions—witness Charcot's joint disease and syringomyelia. But such trophic lesions are usually more destructive and less hypertrophic, although there are also nervous hypertrophies on record. No single lesion of the nervous system would, however, account for the wide-spread symmetrical changes met with in osteo-arthropathy, whereas these could readily be explained by a humoral cause. Is this likely to be intrinsic or extrinsic? Against the former is the absence of hereditary tendency, or of any common factor relating to habits or conditions of life. If there were a constant change in osteo-arthropathy referable to one of the metabolic organs (as, *e.g.*, is found in myxœdema and Bright's disease), or one chemical substance constantly present (as is the case in gout), this would be strong evidence in favour of the intrinsic origin of the poison of osteo-arthropathy. Failing all such evidence, it appears more probable that the cause is from without. The diversity of the associated respiratory conditions points to one of two conclusions. Either osteo-arthropathy is a complication of many different diseases (just as tubercle may be a complication of typhoid fever, measles, or ordinary bronchitis), or it is not a separate disease at all, but a group of symptoms dependent upon a common mechanism, which may be excited by a number of recognised diseases. The absence of any definite course is an argument in favour of the latter hypothesis. That most or perhaps all of the associated diseases are bacterial in origin, and that no correspondence can be traced between the intensity of the primary disease and the degree of peripheral changes, favours the conclusion that the common factor is of the nature of a toxine or ferment; but it does not follow that this is always identical in its origin. There is nothing improbable in the hypothesis that it may be sometimes tuberculous, sometimes syphilitic, sometimes the product of yet other causes. Just as many different zymotic diseases are capable of producing arthritis, so also they may be able to produce distal hypertrophy and periosteal



changes. The rarity of suppuration in the peripheral changes of osteo-arthropathy and its frequency where bacteria are embedded in the tissues make it probable that only a toxine and not the microbes themselves are concerned in the hypertrophic changes.<sup>1</sup> That these changes are not more frequently recorded may be due to their having been overlooked or disregarded in their minor degrees, or to the action of some protective mechanism which only occasionally fails. The recorded cases are evidently not all of the same kind.

To begin with, we have the group which lies intermediate between acromegaly and osteo-arthropathy (see p. 14), in which the distal hypertrophies appear to be primary. These could only be accepted as osteo-arthropathy if the latter should prove to be due to a distinct extrinsic cause, which at present I regard as unlikely. In this group should also be included those cases which have a previous history of lung disease, but which present symptoms characteristic of acromegaly, and not found in ordinary osteo-arthropathy—undeformed, hypertrophied extremities, enlarged tongue and lower jaw, or symptoms pointing to enlargement of the hypophysis cerebri. In such cases the lung disease is probably an accidental, or merely a modifying circumstance, not the primary cause. Other cases to be excluded are those presenting hypertrophies of nervous origin, whether central or peripheral; congenital or non-symmetrical acquired hypertrophies; cases clinically resembling *ostitis deformans*, and others already alluded to in the section on diagnosis. The remaining cases might be provisionally grouped into a tuberculous group,<sup>2</sup> a syphilitic group,<sup>3</sup> a group dependent upon pneumococci and the various pyogenic bacteria,<sup>4</sup> a group

<sup>1</sup> Pyogenic organisms sometimes give rise to non-suppurative arthritis, but in this case the bacterial toxins are probably the active agents. It is noteworthy that toxins which dilate the blood-vessels have been obtained by Bouchard from tuberculin, by Charrin and Gley from *B. pyocyaneus*, and by Arloing from staphylococci.

<sup>2</sup> Cases 7, 19, 25, 29, 35, 38, 49, 50, 64, probably also 13, 30, 31; and of Class II Nos. 1, 37, 66.

<sup>3</sup> Cases 16, 40, perhaps also 43; and of the doubtful cases Nos. 4, 55.

<sup>4</sup> Cases 9, 17, 18, 23, 24, 26, 27, 34, 36, 41, 53, 54, 59, 60, 63, perhaps also 22, 28, 39, 57, 61, 62, 12; and of Class II Cases 20, 21, 44, 45, 46, 48, 65, and probably 15.

associated with malignant disease,<sup>1</sup> and a group dependent upon heart disease and other circulatory disturbances.<sup>2</sup> The cases in which the hypertrophy is confined to the ends of fingers and toes would be eventually placed in one or other of the above-mentioned groups. Some of them are probably identical with ordinary clubbed fingers; but so long as the mode of production of the latter is uncertain it is difficult to say where they should be placed. Parrot-head clubbing cannot be taken as evidence of bony hypertrophy, but a skiagraph would often settle the question. In the absence of conclusive evidence it is, I think, safer to class such cases with those of ordinary clubbing such as we meet with in heart disease.

#### ABSTRACTS OF CASES.

*Class I, typical cases.*—Nos. 7—10, 12, 13, 16—19, 22—36, 38—41, 43, 49, 50, 52—54, 57, 59—64.

CASE 7.—Mettenheimer, 1885. Man æt. 30. Seven years previously had hæmoptysis followed by phthisis. During the last two years fingers and toes became clubbed, and left forearm and hand periodically swollen, corresponding with periods of deterioration in general health. Bony epiphyses of left forearm increased at the same time. The nails became red and large, and their roots could readily be felt during the attacks.

Ref. paper read in summer, 1885, before the West Mecklenburg Surgeons' Society, "Der partielle Riesenwuchs als vorübergehende Krankheitserscheinung," 'Memorabilien,' 1885, p. 449.

CASE 8.—Saundby, 1889. A stoker, æt. 37, admitted August 2nd, 1888. Fourteen weeks before admission had difficulty in pulling on his boots. The swelling began on dorsum of feet. A fortnight later pains in ankles and knees

<sup>1</sup> Cases 8, 10, and of doubtful cases Nos. 5, 56.

<sup>2</sup> Cases 33, 52, and probably 31, 32.

and soon after in wrists, while knees swelled and grew stiff. At the end of three weeks backs of hands began to swell, and pains in wrists obliged him to give up work.

*On admission*, great enlargement of hands and forearms, bones as well as soft parts; skin pigmented, veins swollen, radials enlarged. Fingers thickened, ends bulbous, and nails convex. Knees enlarged, partly from effusion, partly bony enlargement. Veins large and full. Legs uniformly enlarged down to ankles, where synovial effusion. Feet like elephantiasis. Toes thickened. Slight œdema in lower limb, none in upper. Movements impeded and clumsy in wrists, hands, knees, and ankles. Ribs, clavicles, and iliac crests thickened. Ears large, fibro-cartilages thickened. Nose large, probably thickened. Skull unaltered, zygomatics and malars prominent. Chin long and pointed, not thickened. Tongue not enlarged. No loss of memory, headache, affection of special senses, or vomiting. Numbness in hands, but no loss of sensibility. Patellar and bicipital reflexes absent, plantar and other superficial reflexes exaggerated. Muscles wasted and weak; local contractions when percussed.

*Post-mortem*.—Spindle-celled sarcoma in lungs, one growth growing from wall of branch of pulmonary artery, with caseating pneumonia in its neighbourhood. Horseshoe kidney. Nutmeg liver. Thyroid atrophied, stroma thickened, colloid matter deficient, granulation tissue in some of alveoli, replacing them in large tracts. Pituitary body normal.

Ref. "A Case of Acromegaly," 'Ill. Med. News,' 1889, ii, p. 195. Lefebvre's Thesis, Case 4, 'Des déformations Osteo-articulaires consécutives à des Maladies de l'Appareil pleuropulmonaire,' Paris, 1891.

This case was unusual in the enlargement of ears and nose.

CASE 9.—Sollier, 1889. Man, æt. 42, admitted March 20th, 1889. Two years earlier had empyema, which was operated on but not cured. One year later had pains in fingers, and especially in wrists, fulgurating from elbows to finger tips. Then sudden paresis of hands, which began to enlarge. Two months later similar phenomena in the lower limbs.

*On admission*, muscular weakness, fine tremors in fingers; atrophy of muscles of left arm and right leg; exaggerated reflexes of both kinds; hypertrophy of hands and feet, including adjacent parts of forearm and leg, beginning suddenly above, and involving both bones and soft parts; affecting all segments in proper proportion, but associated with marked clubbing and large parrot-beak nails. Lightning pains felt simultaneously in all four limbs, never separately, sometimes ascending, sometimes descending. Head pains quite recently, but no visceral crises, and no affection of hearing, taste, or smell; recently "near-sighted;" fundus not examined. Painful sensation of heat in feet; tenderness over bones near joints, but not of joints themselves. Diminution in muscular sense, pressure sense, pain, contact, and temperature, in patches disseminated over the whole body, the patches not exactly corresponding with one another.

Ref. "Sur une affection singulière du système nerveux, caractérisée essentiellement par l'hypertrophie des extrémités des membres, des phénomènes paralytiques, et des troubles variés de la sensibilité," *'La France Médicale,'* June 13th and 15th, 1889, Nos. 68 and 69. Lefebvre's Thesis, Case 7.

It is questionable whether this case should be included; perhaps it is more nearly related to syringomyelia.

CASE 10.—Ewald, 1889. Man, æt. 50, admitted for general weakness. Hands were very big, fingers extremely big and long: skin seemed much thickened. "Hands like paws, but less so than in the photograph of the brothers Hagner" (Cases 2 and 3). Extremities of fingers swollen like a club, and nails big, red like peaches, and longitudinally striated; feet the same. Muscles of upper and lower limbs by no means excessively developed. Forearms and legs corresponded to high stature of the man, very bony, and provided with thick skin and powerful muscles; but musculature of thigh and arm was soft and emaciated, so that there was a contrast between the arm and forearm. Sensibility, patellar reflexes, well preserved. Manifest swelling of glands in supra- and infra-clavicular regions on the left; retro-sternal



dulness, proved after death to be due to degenerated glands. The enlargement of hands and feet had begun two years previously, and been regarded as gouty rheumatism.

*Post-mortem.*—Extensive carcinosis with hæmorrhagic pleurisy; thyroid and thymus absent.

Ref. 'Berl. klin. Wochenschrift,' 1889, No. 26, p. 238. Lefebvre's Thesis, Case 8.

This case is exceptional as regards the thickened skin. The dulness behind the manubrium sterni, found in several cases, was the subject of much discussion. It is apparently sometimes due to thickening of the sternum.

CASE 12.—Waldo, 1890. A man æt. 54, who was in good health until six months before admission, when he found his legs growing weak and stiff, and his knees and feet swollen. Soon after, his hands and fingers began to enlarge. Four days before admission he had an epileptiform fit.

*On admission*, cachectic with signs of right pleuritic effusion. Hands enlarged and clumsy, the fingers all enlarged and thickened, all the structures participating, and the joints not more affected than the other parts. Grasp feeble and movements impeded. Bones at wrist apparently thickened as well as clavicles, knees, and iliac crests, but not the bones of cranium or lower jaw. Veins of arms and of left knee enlarged, and finger and toe nails more than usually convex. No œdema anywhere. Mental processes affected, but no head pains or affection of sight. Symptoms of bulbar paralysis appeared, and *after death* there were found cavities in the brain, well-marked aortic stenosis, with calcified cusps, a caseating mass in right lower lobe of lungs, cortical cavities in the kidneys, nutmeg liver, right lobe of thyroid absent, pituitary body apparently normal.

Ref. "Acromegaly," 'Brit. Med. Journ.,' March 22nd, 1890. Lefebvre's Thesis, Case 10.

This case is exceptional in the thickening of soft parts of fingers, absence of finger-joint change, and presence of gross lesions in the brain.

CASE 13.—Spillmann and Haushalter, 1890. Man æt. 45, admitted February, 1890. A temperate man, who denies

syphilis. Typhoid fever at age fifteen. From 1892 to 1894 inhabited damp rooms on ground-floor. Had acute rheumatism for three months, and pains in limbs for four or five months after. In excellent health till 1887, never had a cold, never coughed, never had shortness of breath. Middle of 1887 began to complain of pains in limbs and about back; more fatigued than usual on leaving his (miner's) work; then noticed wrists enlarging, and almost simultaneously his feet also; then limbs and elbows. Early in 1888 had to leave off work because of weakness and pain in bones and joints. Began to cough a little since the beginning of 1889. Seen in November, 1888, and February, 1890; little change in appearance between these dates.

*On admission.*—Very sensitive to cold; muscles flabby; lancinating boring pains in bones and joints, worse at night, very marked in lumbar spine. No important changes in nervous system. Heart, vessels, and glands normal, but aortic sounds faint. Slight dulness and diminished breath-sounds under right clavicle, and a few râles here and there. Thyroid small. Voice and larynx normal. Urine towards the end showed diminution of urea, chlorides, and phosphates; otherwise normal. Head and face unchanged. Spine a little bent, tender over last lumbar spines, but neither kyphosis nor lordosis. Some retro-sternal dulness passing beyond margins of sternum, not due to aortic enlargement. Wide-spread tenderness of bones of limbs and pelvis. Thickening of some of ribs, iliac crest, lower third of humerus, whole of radius and ulna (especially lower third), heads of metacarpals, and phalanges (especially terminal). Fingers enlarged in all dimensions from bony hypertrophy; finger ends like clappers of bells; nails very large and broad, recurved, coarsely striated, much thickened and fast growing. Shoulder-joints painful on movement; elbow-joints restricted in movements, which cause pain; wrist-joints not freely moveable; hands cannot be closed. Enlargement of lower third of femur, patella, whole of tibia (especially lower third, which is gigantic), and foot. Thickening of subcutaneous tissues in leg and foot, with a little œdema. A little fluid in knee-joint, and clubbing of terminal phalanges of toes. Skin of body generally dry,

with very little perspiration. Hair and moustaches grew more rapidly since his illness. Complains of much thirst.

Ref. 'Rev. de Méd.,' 1890, p. 361: 'Contributions à l'étude de l'Ostéo-arthropathie hypertrophiante pneumique.' Lefebvre's Thesis, Case 11.

This case appears to be typical in everything excepting its antecedents. The pulmonary change was so little advanced that the reporters believed it to have developed subsequently to the deformities. Marie took a different view. Perhaps the attack of rheumatic fever paved the way for the changes in the extremities.

CASE 16.—Gerhardt, 1890. Coachman, æt. 62, intemperate, with a history of syphilis, gonorrhœa, and intermittent fever. Having become a porter, and begun to live underground, he was attacked with pains in joints of hands and feet, which at the same time began to enlarge.

*On admission.*—Hands big and awkward, wrist-joints enlarged, together with the epiphyses of forearm. Ungual phalanges much thickened, nails friable, striated in both directions, and loosened by new nails forming underneath. Hairs developed over regions limiting affected parts, *i. e.* over first phalanges of fingers and above lower third of forearms. Feet and lower ends of legs similarly enlarged. Frequent and abundant perspirations over the most affected parts, especially right hand. Many nævi on neck. Tremors and paresis of limbs with muscular atrophy. No fever, but pulse frequent. Thyroid atrophied.

Ref. 'Berl. kl. Wochenschrift,' 1890, p. 1183, "Ein Fall von Akromegalie." Lefebvre's Thesis, Case 17.

CASE 17.—Redmond, 1890. A single woman, æt. 19, admitted July 25th, 1890, complaining of great weakness and swelling of hands and feet, and of pain on movement in wrists, knees, and ankles; also pain in back, right shoulder, and right side, worse at night. Was in good health till March, 1887, when she began to suffer from severe pain in right side, which caused some shortness of breath. About the same time repeated attacks of palpitation. Subsequently became very ill, and was confined to bed from end of May to

middle of July. Was informed she had had inflammation of the right lung. End of August she had completely recovered, and a few months later she was apprenticed to the grocery business, with long hours (7 a.m. to 11 p.m.). Her health soon began to suffer, and menstruation became scanty and irregular. In December, during the prevalence of the influenza epidemic, she noticed that her hands and feet were swollen, sore, and somewhat painful to touch. After a few days in bed the swelling had partially disappeared. Since then her hands and feet remained about the same. Later on her knees began to swell and grow stiff and painful, which interfered with her walking. As far as could be ascertained from the patient, the enlargement of hands and feet attained its present dimensions in a few weeks.

*On admission.* — Anæmic, but otherwise fairly well nourished. Marked increase in carpal ends of radius and ulna. Backs of hands considerably swollen, but not œdematous. Fingers greatly enlarged, ends bulbous, nails slightly convex. Considerable effusion into knee-joints, with enlargement of heads of tibia and fibula. Below the knees, legs uniformly enlarged, ankles widened, and some effusion in the joints. Feet wider and thicker than normal, toes thickened and bulbous. Œdema of dorsum of feet. Thyroid apparently absent. Urine 1022, excess of phosphates, no sugar nor albumen.

She remained under observation till October 12th, 1890. No marked change in condition of hands, wrists, feet, and knees. From time to time complained a good deal of insomnia, nausea, anorexia, and headache; troublesome pain in back; sometimes severe pain in abdomen and sharp attacks of diarrhœa. Temp.  $101^{\circ}$  to  $102^{\circ}$ , no perspirations. After leaving hospital, was bedridden with extreme weakness and almost constant diarrhœa, sometimes passing blood.

Ref. "A Case of Acromegaly," 'Trans. Roy. Acad. of Med. Ireland,' 1890-91, ix, pp. 64-66.

From a plate which accompanies the report there seems to be no perceptible alteration in bones of face and skull. Fingers spindle-shaped, clubbing ill-marked, nails not very large, and look cylindrical.



CASE 18.—Lefebvre, 1891. Man æt. 42. History of malaria in 1872. Somewhat intemperate. In April, 1886, right empyema after a chill while perspiring freely. Twice punctured, and then forty days after onset of illness drainage-tubes inserted for irrigation. While in hospital an hypnotic injection was administered. When he woke he had paresis of hands, and had to be fed for a month. At the same time the hands swelled up, reaching present size in four days. After a holiday Estlander's operation was performed in February, 1887, five ribs being resected. In 1888 he had retention of pus, and an illness followed in which he was unconscious for five days. After this he noticed abnormal swelling of extremities, which continued to the time he was examined, in May, 1890. He was then much emaciated, cranium, face, ears, and lower jaw normal; hands enormous, thickened on dorsum; lower ends of metacarpals and adjacent joints enlarged; fingers large and long, with much-swollen terminal segments, hyperextended and bearing large watch-glass nails. Enlargement of wrists, and limitation of movement there and in hands, elbows, and shoulders. Condyles of femurs and malleoli enlarged, with perimalleolar thickening; œdema of legs above boots, increased by warmth; toes deformed like fingers, but less so. Decided pigmentation over face, and dorsum of hands and feet. Ichthyosis over external border of feet, slight keratosis pilaris on legs. Sense of heat in feet, least in morning. Sight a little feeble for distant objects; no amblyopia, no diplopia, no retraction of visual fields. Special senses otherwise normal. Vertiginous attacks while at rest. Intelligence slightly impaired; queer notions, absence of mind. Tremors of debility. Athetosis of right foot, increased by touching it, and by voluntary movements of hand or tongue. Slight deviation of tongue to left. Slight albuminuria for a time. Slight œdema of eyelids in morning. Frequent micturition at night.

Ref. Lefebvre's Thesis, Case 12.

CASE 19.—Thérèse, 1891.—Man æt. 38, with a family history of phthisis. Quite well until age twenty-seven, but

given to excesses. Invalided from the army with symptoms of phthisis.

*On admission.*—Pains in metacarpo-phalangeal joints of hands, knee and ankle joints, followed by swelling. Exacerbations and remissions for three months, when fingers were noticed to be growing larger. At this time the whole hand deviated on ulnar border; on extending the fingers slight flexion persisted in proximal and forced extension in distal phalanges. Finger ends were clubbed, and nails curved both ways, and striated in both directions. Periarticular swellings were present to three fingers' breadth above wrists, and slight difficulty in movement in hands and wrists. Abundant perspirations appeared over the whole upper limb. Knees were globular, with slight effusion and slight periarticular swelling. Ankle-joints slightly enlarged and painful. Toes and their nails deformed somewhat like the fingers. A very complete *post-mortem examination* is recorded, showing bone changes in radius, ulna, and slightly in terminal phalanges and other bones, slight erosion in wrist-joint, enlarged liver, cavities in the lungs. Most of the essential points in this case, on which Lefebvre's Thesis was largely based, have already been given.

Ref. Lefebvre's Thesis, Case 13.

CASE 22.—Rauzier, 1891. A chemist, æt. 34, admitted January 16th, 1890. Father had very big hands, and all his collaterals had larger feet than usual. Up to age twenty-one good health, but enlargement of hands and feet already noticed in infancy. In 1875, while in the army, he had mumps and slight orchitis. In 1876 pneumonia, apparently malarial, followed by pleurisy, which became purulent and was several times tapped, then irrigated daily, and finally in 1885 treated unsuccessfully by Estlander's operation. There remained a fistula with copious purulent discharge, excepting when there were, from time to time, attacks of retention; and there was also noticed a progressive and considerable enlargement dorsally above the wrists, in addition to the congenital hypertrophy of the extremities. In 1889 he lost strength, and had to give up work after domestic troubles. In January, 1890, he had an attack of

influenza and entered hospital. He died on May 29th. One month before death he was emaciated, with enormous bony extremities, left side of chest contracted, spine sclerotic without kyphosis. Head, lower jaw, tongue, and skin generally normal. Penis voluminous, testicles small. Slight bony enlargement at elbows; enormous bony enlargement dorsally above wrist, and of the upper ends of metacarpals below; between these points some thickening of the soft tissues, not affecting the skin, which is non-adherent. The wrist-joint is shown by a slight transverse furrow. The tendons of extensors and radials, which are clearly seen to contract, seem to float in the midst of semi-fluctuating masses of the same consistence as the fungosities of tubercular arthritis. Also a sensation as of extra-articular foreign bodies. Metacarpal region of normal dimensions. Fingers enormously enlarged and elongated, with huge drumstick ends and parrot-beak nails; enlargement entirely bony; interphalangeal joints slightly swollen. He has never had local pain or change in sensation or motility; but has profuse perspirations from the affected parts on doing delicate work. Lower limbs similarly affected, but with some thickening of soft tissues and a little œdema. Knees large; patellar reflexes normal.

*After death.*—No evidence of pulmonary tuberculosis; heart normal; extensive abdominal adhesions; large liver with granular surface, caused partly by fatty masses, partly by sago-grain amyloid bodies. Slight superficial erosions in left elbow, wrist, and knee, not affecting the bone. Inner end of right clavicle enlarged.

Ref. 'Rev. de Méd.,' 1891, p. 30. 'N. Montpellier Med. Suppl.,' 1893, ii, pp. 647—661. Lefebvre's Thesis, Case 18.

Apart from the congenital enlargement of the hands and feet, this was a typical case. The articular troubles may possibly have been tubercular.

CASES 23 to 33 inclusive are Bamberger's.

CASE 23.—Man æt. 23. Bronchiectasis, abundant mucopurulent, putrid, stratified expectoration: recent lobar



pneumonia with left pleuritic effusion and pulmonary œdema. Clubbing of fingers and toes last nine years.

*Post-mortem.*—Regular thickening and cortical sclerosis of leg-bones anteriorly and below. Spongy substance, especially of epiphyses, increased in density.

CASE 24. Man æt. 67. Probable pleurisy at age forty; dyspnœa ever since. Abundant expectoration for ten years, fœtid for eight years. Enlarged extremities eight years. Epileptiform fits one year ago. Right side of chest contracted, dull at base with diminished vesicular murmur and copious disseminated crepitations. Lower ends of radius, ulna, tibia, and fibula thickened, tibia sensitive; intermittent œdema of legs; clubbed fingers with unguinal cyanosis.

CASE 25. Man æt. 48. Left pleurisy eighteen years ago; an accident eleven years ago. Cough one year, especially on right lateral decubitus, expectoration stratified, purulent, putrid; the same time clubbing of fingers and toes, malleoli and wrists. All the long bones are sensitive. Cold causes spontaneous pains. Lower ends of radius and ulna thickened. Clubbed fingers and toes with curved nails. Recent painful enlargement of the left mammary gland.

*Post-mortem.*—Chronic and subacute tuberculosis of lungs, with fibrous peribronchitis and bronchiectasis on right side. Pleural adhesions. Dilated and hypertrophied right ventricle. Small colloid thyroid. Ossifying periostitis of femurs and bones of legs and forearms. Large metacarpals and phalanges (especially the distal) with surface alterations. Large but otherwise unaltered tarsal bones; superficial deposits on metatarsals; terminal phalanges also enlarged. (A minute description is given of the bone changes.)

CASE 26.—Man æt. 25, with stratified, fœtid, abundant expectoration free from tubercle bacilli. Has had a cough for ten years, fœtid sputa for over four years. During the last four years enlargement of finger ends and malleoli, becoming considerable the last six months. Clubbing of fingers and toes, tenderness of lower third of femurs and



lower third of tibiæ, the latter being considerably enlarged. No certain modification of forearms. Well-marked, high dorsal, kypho-scoliosis with a laterally flattened thorax, copious râles, and feeble breath-sounds. Frequent feverish attacks. Slight cyanosis of face and fingers.

CASE 27.—Man æt. 39. Left pleurisy in 1884, and again in 1888. In September sputa became very abundant and fœtid, and there were attacks of vertigo and sensations of heat and cold. Since November, 1889, lancinating pains in right knee, increased by movement; pains in the right instep, relieved by rest in bed; never any pains in fingers. In December, 1889, fever, frequent hæmoptysis, drumstick fingers and toes, painful thickening of malleoli.

*Post-mortem.*—Multiple gangrene of lungs; bronchiectasis; basic meningitis. Osteophytes on both femurs; terminal phalanges of fingers thickened; tibiæ thickened above internal malleoli.

CASE 28.—Patient aged 17. Variola at nine years of age, which left him thin and pale. At age fifteen began to cough. A year later sputa became fœtid. Burning pains on pressure and on coughing, felt in bones from knees to toes. The last two months similar pains from wrists to fingers, and thickening of wrists with terminal phalanges. Lower ends of radius and ulna thickened; slight œdema of back of hand; drumstick fingers with somewhat cyanosed curved nails. Symptoms in lower limbs marked by œdema. Considerable albuminuria. Abundant, thick, greenish, viscid, fœtid expectoration without tubercle bacilli. Dulness at left base with abundant large râles; harsh inspiration and obscure expiration at the apex.

CASE 29.—Man æt. 30. Cough from twelve to seventeen, and from nineteen to present time. The last two years more abundant expectoration, loss of flesh, night sweats. A year ago hæmoptysis. A month ago sputa frequently fœtid. The last two years constant pains in malleoli, tibiæ, knees, hands, elbows, and right shoulder, more marked at night and disappearing in bed. Also slight

swelling of dorsum of feet and of legs, disappearing at night. The pains are often lancinating or perforating; while at rest there is a sensation as of lead. Three years ago the patient noticed that his distal phalanges and malleoli were beginning to increase in size.

*On examination.*—Decided dulness of upper lobes of both lungs, with bronchial breathing and loud râles. Generalised catarrh. Abundant expectoration, muco-purulent, imperfectly stratified, scarcely fœtid, without tubercle bacilli. Clubbing of fingers and toes, tenderness of upper and lower ends of bones of forearm; decided tenderness of lower third of femur, patella, whole of tibia, with swelling of the lower part of tibia. Tenderness of middle portion of fibula. Extreme tenderness over sternum.

All the foregoing cases of Bamberger (Nos. 23 to 29) are regarded by him as essentially cases of bronchiectasis with fœtid secretion. He expressly notes the absence in all of tubercle bacilli. The remainder (Nos. 30 to 33) are attributed to heart disease, although in several there was also lung trouble.

CASE 30.—Child æt. 7, with pulmonary stenosis, congenital cyanosis, and tubercular deposit in lung. Fingers clubbed with curved nails.

*Post-mortem.*—Lower half of tibiæ red and thickened, readily detached and covering osteophytes. Upper half of tibia and also femur free from change.

CASE 31.—Man æt. 53, with aortic insufficiency and tuberculosis of lungs. Clubbing of fingers and toes with curved nails. Bones of lower third of forearm slightly thickened, not painful nor tender; no swelling of soft parts. These enlargements followed after many years' symptoms of phthisis.

*Post-mortem.*—Periosteal adhesion of lower part of tibia, with osteophytes underneath.

CASE 32.—Man æt. 50.

*Post-mortem.*—Aortic insufficiency from warty and ulcerative endocarditis; fatty degeneration and dilatation of heart.

Right lung, apex adherent and pigmented; left pleura shows adhesions. Slight clubbing of fingers and toes. Both tibiæ and fibulæ thickened.

CASE 33.—Man æt. 36. History of acute rheumatism. Moderate clubbing of fingers. No bony deformities noticeable during life, but tenderness of inner border and lateral surface of left radius.

*Post-mortem*.—Stenosis of ostium venosum; aortic insufficiency; endocarditis; lungs only show chronic congestion. Osteophytic deposit over left radius.

The preceding cases (Nos. 30 to 33) are only very briefly described. Bamberger insists upon the identity of the bone changes in heart and lung cases. The plates published with his article support this contention.

Ref. "Ueber Knochenveränderungen bei chronischen Lungen und Herzkrankheiten," 'Zeitschr. f. kl. Med.,' 1891, xviii, p. 193; Lefebvre's Thesis.

CASE 34.—Freitag, 1891. Man æt. 48, admitted December 28th, 1890. In good health until January, 1890, when he had influenza followed by a chronic cough, which increased towards the end of the year, rendering him bed-ridden.

*On admission*.—Sputum stratified, fœtid, containing elastic fibres, but no tubercle bacilli. Signs of bronchiectasis. Clubbed fingers and toes, with characteristic nails. Died January 16th, 1891.

*Post-mortem*.—Large heart; bronchiectasis with putrid bronchitis and gangrene of lung; left base condensed and airless. Thickened periosteum on tibiæ and fibulæ, mostly below; bones unaltered excepting for periostitis ossificans. Carpus, metacarpus, tarsus, and metatarsus practically normal. A careful description is given of the lungs, one hand, and one foot.

Ref. 'Ueber die Trommelschlägelfinger und Knochenveränderungen bei chronischen Lungen und Herzkrankheiten,' Inaug. Diss., Bonn, 1891.

CASE 35.—Orillard, 1892. Man æt. 56, admitted June 6th, 1891. Intemperate, but no syphilis, and in robust health

until fifteen months before admission. In 1870 he received a spent ball on the right tibia, but no great damage was done. Also had a fall on right elbow. In 1876 he had suppurative adenitis in right groin. Eight years ago an iron bedstead fell on his left leg, causing a complicated fracture followed by suppuration. He recovered after six months in hospital. Five years ago, after a purge, had an irritating rash of bullæ on face and body, lasting two hours; and ever since he has been subject to similar attacks without obvious cause.

Fifteen months ago the right side of his chest was crushed between two empty carts. He attributes all his present troubles to this accident, although next day he did not feel it. For eight months he has had a cough, hæmoptysis, loss of flesh and strength. For five months sharp pains at base of right lung. About the same time he noticed his finger ends enlarging.

*On admission* he had kypho-scoliosis with maximum at seventh or eighth dorsal vertebra, and right pleuritic effusion which proved to be serous. There was limitation of movement in right elbow, enormous hands, and characteristic finger ends and nails; knees slightly swollen and flexed, ends of toes clubbed; head and palate normal. There was pain along the sixth, seventh, and eighth intercostal nerves on right side. No paralysis, and general sensibility preserved in all its kinds. Special senses normal. Tingling and numbness in fingers; cramps in calf and thigh, especially at night, less frequent than two or three years ago. Occasional night sweats. Sensations of cold in hands and feet, sometimes when perspiring freely and hot all over. No lightning pains. Intellect and memory unaffected. Reflexes normal. Thyroid of normal volume. No bacilli in sputum, and the pleural fluid did not cause tuberculosis in a guinea-pig. During his stay there were attacks of urticaria, corresponding with diminished extensibility of elbows and increased swelling of finger ends.

*After death* (on October 3rd) there was found, in addition to considerable pleuritic effusion, a bony cavity in seventh dorsal vertebra, communicating with an abscess cavity in the remains of right lung, which was adherent. Pleura much



thickened. Cretaceous tubercles at top of left lung. Heart and kidneys normal, liver and spleen enlarged.

Ref. 'Rev. de Méd.,' 1892, p. 231, "Un cas d'Ostéo-arthropathie hypertrophiante pneumique."

The evidence of bony enlargement in this case is not very clear, but the knees and ends of fingers and toes were apparently typical.

CASE 36.—Gillet, 1892. Boy æt. nearly 13. Repeated bronchitis since age four. Fingers deformed, and general growth arrested since age six.

On admission about 30 cm. shorter than average stature at his age. Features puffy-looking. Well-marked emphysematous chest and signs of bronchial dilatation. Drum-stick fingers and toes with characteristic nails. Bony hypertrophy of lower ends of legs, all other parts of the skeleton being, if anything, small for his height. Thyroid apparently normal. Tendency to cold extremities, but no cyanosis or local asphyxia. Some albuminuria. Intelligence normal for his age.

Ref. 'Ann. de la Policlinique de Paris,' March, 1892, No. 3, p. 99, "Ostéo-arthropathie hypertrophiante pneumique de P. Marie chez l'enfant."

CASE 38.—Packard, 1892. Man æt. 29. At age fifteen slight hacking cough and hæmoptysis followed by night sweats. About the same time noticed finger tips and nails becoming rounded. Age twenty-four "dysentery" for three months. For a year after this attack he ceased coughing, but at the end of this time the cough returned. Age twenty-eight another attack of "dysentery," and other attacks on and off since then. While bowels are loose expectoration ceases. He has frequent spells of rheumatoid pain in various joints, and at times his hands are stiff.

For seven or eight years after cough began he was stiff in all his joints whenever he attempted to move. The cough, clubbing of fingers, arching of back, and stiffness of joints were all noticed about the same time. Memory has been failing for five years. No headache. Vision normal. Slight prominence of lower jaw. Kyphosis with maximum at

seventh dorsal vertebra. Hair ill-developed on trunk. Evidences of old empyema on right side. Expectoration foetid, without bacilli or elastic tissue. Hands characteristic, bones slightly enlarged above wrists. Clubbing of toe ends. Tibiæ large. Knees and other joints apparently normal.

Ref. 'Internat. Journ. Med. Sci.,' June, 1892, ciii, p. 657, "A Case of Acromegaly, and illustrations of two allied conditions."

This case is described by the reporter as Osteo-arthropathy.

CASE 39.—Möbius, 1892. Man æt. 51. Pneumonia eight years previously, but apparently recovered completely. In November, 1891, a plate of iron weighing 1 cwt. fell on to fourth and fifth fingers of right hand. In December, 1891, taken ill with bad cough, profuse perspirations, and debility. After some weeks the sputum became foetid, but the general health improved. In January, 1892, pains in right little finger and ulnar side of ring finger, which increased and went up to the elbow, disturbing his sleep. About a week previously the fingers were noticed to have swollen. In February the pains were better, but the hands became weaker and more useless, so that he sought medical advice.

*On examination.*—Thickening of right metacarpus, and bending with clubbing of little fingers. Paresis and atrophy of all muscles supplied by right ulnar nerve. Partial R. D. in corresponding region of hand, anæsthesia of little finger and ulnar side of ring finger and hand, curving of fourth and fifth fingers from paralysis of lumbricales, slight clubbing of first three fingers, decided clubbing of last two, whose ends were somewhat cyanotic, egg-shaped, with large strongly curved parrot-beak nails. In left hand finger ends slightly clubbed. Chest rigid on left side, with dulness, bronchial breathing, and rhonchi behind over base. Much foetid expectoration. Cardiac dulness increased to left; no murmurs, but action feeble. Feet normal. No enlargement or pain in larger bones.

Ref. 'Münch. med. Wochenschrift,' xxxix, June, 1892, p. 23, "Zur Lehre von der Osteoarthropathie hypertrophiante pneumique." See p. 23 for remarks.

CASE 40.—Schmidt, 1892. Woman æt. 48, who contracted syphilis at age twenty-five, and in her thirty-first year had "rheumatism" in several joints and in the loins. At age thirty-five severe head pains. At age forty-seven vague pains in all the limbs, and general debility, and a few months later had decided thickening of the joints of both hands and elbows, with slight disturbance of mobility. She also had a severe attack of pain with enlargement of the terminal phalanges of fingers and toes, while nails became curved. Two months later still there was slight œdema of left elbow-joint, evident swelling of peripheral ends of forearms and of wrists, and drumstick phalanges with longitudinally striated parrot-beak nails. The rest of the joints of fingers and hands were normal. Passive movements were painful. Toes were affected like fingers. Under Pot. Iodid. the joints became less swollen and less painful, and the finger ends less deformed. Later on in the same year the patient had an ulcerated tongue, which also yielded to Pot. Iod. There was no history of lung disease.

Ref. 'Münch. med. Wochenschrift,' xxxix, 1892, p. 36, "Ueber die Beziehung der Syphilis zur Ostéarthropathie hypertrophiante pneumique."

This case is exceptional in the apparently syphilitic origin of the symptoms and the absence of lung disease. There is, however, no post-mortem examination on record.

CASE 41.—Marina, 1893. Baker, æt. 63, not a heavy drinker or a smoker, with no history of syphilis, and quite well until April, 1892, when he had an attack of pneumonia. Some time after he noticed his hands becoming bigger, and felt shooting pains in them. *On examination*, slight cervico-dorsal scoliosis and slight atrophy of serrati and supraspinati. Very little alteration of tarso-metatarsal joints; scarcely noticeable enlargement of knee-joints; inferior maxillæ not enlarged; no thickening of forearms; no affection of nervous system beyond slight hyperæmia of optic nerves, and no visual disease. Hands enlarged, especially across heads of metacarpals; fingers thick and wide, especially proximally, not elongated, finger tips hard, swollen (this is not noticeable in the figure), skin thick but



normal, nails transversely striated, not curved like a parrot's beak. Judging by the figure, the proximal joints of little and mid finger of left hand are swollen. There is stated to have been some diminution in size of hands under Potass. Iodid. The hands and nails do not seem quite typical.

Ref. '*Riforma Medica*,' 1893, ninth year, vol. i, p. 806, "*Osteoartropatie ipertrofiante pneumonica parziale ed Acromegalia.*"

CASE 43.—Chrétien, 1893. Woman æt. 54. First pregnancy age twenty; child delivered at term, but died in a week. No other children and no miscarriages, and catamenia continued regular. Soon after, an attack of "rheumatism" in the lower limbs, not generalised, and lasting four months. Two later attacks, the last in July, 1891. Had lupus of the face at time of first rheumatic attack; cured in St. Louis Hospital. Never any other tubercular manifestation. Menopause at age fifty-one; repeated epistaxis during two years. The right hypochondrium began to swell and become painful, and cardiac action became increasingly violent and irregular, with much dyspnœa. Ankles became œdematous at night, then permanently; then the knees, then root of thighs, but never abdomen. About the same time had erysipelas of face followed by abscess, and pains in root of nails followed by clubbing. In 1891 treated as a cardiac case. Condition of extremities not noticed until February, 1892. She then had the appearance and signs of congenital syphilis, a prominent superior maxilla, cranial bones apparently normal, no lumbar curvature to the spine, enormous enlargement of finger ends and nails of characteristic kind, hyperidrosis of skin of hands, considerable thickening of lower ends of radius and ulna, pain and tenderness in elbows and shoulders, enlarged feet and ankles of the usual kind, hyperidrosis of feet, effusions in both knees with pain on pressure, slight local keratosis on legs, with dilated veins, and comparative absence of hairs on legs and arms. The cardiac area of dulness was increased to a considerable extent, with a very intense, regular, rough systolic murmur over whole præcordium, loudest at mid-sternum, also heard in axilla posteriorly near spine and



under clavicles, especially on left side, and not modified by position of patient. A second softer murmur was heard at cardiac apex ; no vascular murmur on jugular pulse, and no hepatic pulse, but considerable distension of venous sinuses on coughing. The lungs appeared normal beyond a few mucous râles over right base. There was no coldness of extremities, but capillary venous twigs were visible over both trunk and limbs. The blood was normal. Liver large, firm, smooth but tender. Spleen enlarged. Urine showed traces of albumen, diminution of phosphates and urea, no lactic acid or sugar.

Patient was put on KI, but this caused violent dyspepsia. She had subacute articular crises in big joints, especially knees, usually yielding to salicylate and applications of laudanum. There were severe bone pains, increasing tenderness of stomach, and loss of strength and flesh. She died at the end of January, 1893.

*Post-mortem.*—Ascites ; syphilitic visceral lesions in abdomen ; chronic nephritis ; pelvic peritonitis with adhesions and a puriform mass in front of the uterus ; a few pleural adhesions on ribs and posteriorly, none at apex ; right lung adherent at base to diaphragm and liver, with an abscess cavity with caseous matter. Atheroma in aorta. No explanation of murmurs in heart.

Ref. 'Rev. de Méd.,' 1893, p. 326, "Un cas d'Ostéo-arthropathie hypertrophiante chez une syphilitique."

CASE 49.—Thorburn, 1893. Man aged 21. Admitted December 14th, 1892. Five years previously had bursitis in front of right knee. Shortly after, weakness and increasing curvature of back, followed by abscesses in right groin and loin. Enlargement of hands and feet noticed by patient in autumn of 1891.

*On admission.*—Dorso-lumbar caries, with signs of phthisis. Face, head, neck, tongue, and lips normal. Thyroid small. Enormous hands, enlargement beginning three inches above wrist, affecting all diameters. Normal outlines obscured as in white swelling. Bones greatly enlarged. Normal prominences thickened and obscured. Line of wrist-joint ill-marked. Metacarpal region broad and thickened, especially

dorsally. Digits still more enlarged, with distinct prominences at interphalangeal joints, especially proximal ones. Bulbous terminal phalanges. Nails in good proportion, wide, a little short, not markedly striated, not curving over finger ends. Deformity of digits, chiefly bony. No œdema; skin normal but thick. Feet analogous to hands. Swelling beginning five inches above ankle-joint. Knees enlarged and sometimes painful. Some effusion and pulpy thickening of synovial membrane. Never any pain or tenderness of hands or feet.

The case died in September, 1895, and the results of the *post-mortem* examination by Westmacott were communicated to the Pathological Society by Mr. Thorburn on May 19th, 1896.

The lungs, spine, right supra-renal body, and right tibia, showed tuberculous lesions. The viscera showed extensive amyloid change. The skull was much thickened, rough internally, sclerosed, and devoid of diploë. In the facial bones, ribs, sternum, vertebræ (excepting the carious region), and clavicles no changes were observed. The limb bones were covered with a rough porous layer of subperiosteal bone. Their compact layer was sclerosed, and the medullary cavity encroached upon by new bone. These osseous deposits were especially well-marked in the shafts of the bones and the attachment of muscles and fasciæ. The shoulder-joints contained excess of clear fluid, the cartilages being eroded, but the synovial membranes normal. In the hip-joints closely analogous appearances were observed, and the hips and shoulders were remarkably symmetrical in the extent and distribution of their erosions. In the elbow and knee-joints symmetrical erosions were found with thickened synovial membranes, and less fluid than in hips and shoulders. Erosions of cartilage, principally marginal, were also found in wrists, ankles, radio-ulnar, carpal, tarsal, and other small joints.

Ref. 'Brit. Med. Journ.,' 1893, i, p. 1155, "Three Cases of Hypertrophic Pulmonary Osteo-arthritis;" and 'Path. Soc. Trans.' for 1896; also 'Brit. Med. Journ.' (Annual Meeting of 1896).

The nails in this case were not typical, and there seems

to have been rather more thickening of soft tissues in upper limb that is usual.

CASE 50.—Thorburn, 1893. Man æt. 38, admitted December 30th, 1892. Symptoms of phthisis in March, 1889. Ankles swollen the same year, especially in damp weather and after walking. Finger clubbing noticed twelve months before admission; variable. Wrists enlarged two months before admission.

*On admission.*—Signs of advanced phthisis. Hands with lower ends of forearms symmetrically enlarged; hypertrophy chiefly bony; metacarpal region little affected; interphalangeal joints enlarged; terminal phalanges clubbed; nails large, curved both ways. Over outer tendons on posterior aspect of both wrists is a diffused elastic swelling, as if from slight tenosynovitis. Whole forearm large; rest of limb wasted. Feet and lower ends of leg similarly enlarged, natural hollows being filled up. No œdema. Skin normal. Some fluid in knee-joints, and enlargement of lower ends of femurs. Slight pains in knees, ankles, and wrists. Slight general kyphosis of spine, without angular curvature. Head normal.

Ref. 'Brit. Med. Journ.' as above.

Thorburn's third case (No. 51) appears to me not to be typical. The next case is referred to by Thorburn in a note.

CASE 52.—Thorburn, 1893. Post-mortem examination of a boy. The lower ends of tibiæ, fibulæ, radii, and ulnæ were found thickened, with ordinary clubbing of fingers, mitral stenosis, but no lung disease.

Ref. *ibid.*

CASE 53.—Field, 1893. A boy, born December 4th, 1891; admitted May 24th, 1893. A very healthy child, and grew quickly, becoming very fat. In June, 1892, required larger boots and shoes than most children of the same age, but feet were not considered very large in proportion to his general size. In August, 1892, had whooping-cough and bronchitis severely, and had been subject to bronchitis ever since. From that date had steadily wasted, but hands and feet had been growing larger and larger.

*On admission.*—Left inguinal hernia and phimosis. Emaciation, especially of thighs and arms. Lower part of face greatly developed; both lips large and loose, and partly everted, especially the lower one. Malar bones prominent. Pinna  $2\frac{1}{2}$  inches long, nose not enlarged. Thyroid not enlarged. Heart-sounds normal. Bronchial râles at bases. Upper limbs very thin to just above wrist. Hands with lower articular ends of radius and ulna very large, bones large, tissues full, firm, and healthy-looking, unlike the rest of the limb. Nails slightly curved in both directions. Thighs emaciated. Knees enlarged like strumous joint, but not painful nor stiff. Feet, and to less extent ankles, much enlarged like hands.

Ref. 'Brit. Med. Journ.,' 1893, ii, p. 14, "Acromegaly and Hypertrophic Pulmonary Osteo-arthritis."

This is the earliest case on record. The enlargement of face and ears is unusual, and reminds one of acromegaly (compare Cases 36, 60). The case is regarded by Arnold as acromegaly, by Sternberg as osteo-arthritis.

CASE 54.—Kerr, 1893. Man æt. 22, in good health until February, 1893, when he had right pleuro-pneumonia, followed by "abscess of the lung." He slowly recovered, and six weeks before admission began to have aching pains in knees and ankles; his wrists and ankles rapidly enlarged (in three weeks), since which he has had to wear larger boots and gloves.

*On admission* (October 17th, 1893).—Well nourished, but has lost weight. Tip of nose a little congested and cold-looking. No headache or affection of sight. Thyroid distinct. Neck and larynx not enlarged. Sensation and mental faculties unaffected. No fever. Urine normal. Clavicles and bony thorax unaltered, but distinct lordosis in dorso-lumbar region. No retro-sternal dulness. Heart displaced a trifle down and to right with epigastric pulsation. No accentuation of pulmonary second sound. Dulness, increased resistance, diminished vocal fremitus, vocal resonance and breath-sounds over lower third of right lung. Slight hacking cough. Muco-purulent expectoration without bacilli. Lower two thirds of radius and ulna evenly and smoothly



enlarged up to ends. Wrist-joints loose and crackling, but not distended. Carpal bones not much thickened. Fingers spindle-shaped, with enlarged joints, and bulbous, over-extended ends, and very large, thin, much curved, smooth, deep pink nails. Soft parts over upper limbs slightly thickened. Skin thin, elastic, and smooth. No œdema. Frequent perspirations. Fists cannot quite be clenched. Knees enlarged from bony overgrowth, and crackling. Ankle-bones enlarged.

Ref. 'Brit. Med. Journ.,' 1893, ii, p. 1215, "Pulmonary Hypertrophic Osteo-arthropathy."

CASE 57.—Demons and Binaud, 1894. Man æt. 35, admitted April 10th, 1893. Nine years previously had a knife-cut in right thorax, which never quite healed. In 1891 acute purulent pleurisy. First manifestations of osteopathy nine or ten months after this. These lesions went on progressing chronically, notwithstanding the cure of the pleurisy and the closure of the wound. No hæmoptysis followed his stab, and no enlargement of the side, dyspnoea, or expectoration, but he was ill one month, and in violent expiration air came out at the wound. Two months later it healed up, but it opened again and discharged a little matter during an attack of dysentery at Haiphong, and at various times since then.

*On admission.*—Dorsal kyphosis with left dorsal scoliosis and partial collapse of right lung; no tubercle bacilli in sputum. Heart unaffected beyond accentuation of pulmonary second sound. Hands, nails, and lower parts of forearms showed characteristic enlargements; outer ends of clavicles also enlarged. Lower extremities affected like upper. Knees enlarged.

Treated with subcutaneous injections of pulmonary extract. General improvement; closure of fistula; movements improved; bones and joints unaltered.

Ref. 'Arch. gén. de Méd.,' 1894, vol. ii, pp. 129—147, "Sur un cas d'Ostéo-arthropathie hypertrophiante pneumique traité par des injections de liquide pneumique."

CASE 59.—Springthorpe, 1895. Man æt. 21, admitted January 23rd, 1893. Neurotic family history. Always

strong and well until, at age ten, he had right pleurisy with effusion, followed by "typhoid fever." Very seriously ill for three months. Was then put into plaster of Paris for spinal curvature. At that time had ichthyosis. The last two years had transient swelling of feet, and the last six months swelling of the stomach.

*On admission.*—Dyspnœa, pain and swelling in legs and stomach, weakness and cough. Face swollen; ascites; enlarged liver and heart. Right chest much flattened and retracted; corresponding dorsal curvature, and sternum displaced upwards and to left, head to the right. Upper arms wasted. Lower ends of radius and ulna enlarged. Fingers lengthened and clubbed. In lower limb some ichthyosis, and œdema of legs and thighs. Knees enlarged, as also ankles and big toes. Died a few days after admission.

*Post-mortem.*—Right lung collapsed, left lung engorged, friable and small. Right empyema. Pericardium adherent; heart large, flabby, and dilated, without valvular disease or congenital deformity. Thymus absent. Liver probably lardaceous. Spleen large, fibroid, and probably lardaceous. Kidneys pale. Pituitary gland not enlarged. The kyphosis was the result of the empyema.

Ref. 'Brit. Med. Journ.,' 1895, vol. i, p. 1257, "A Clinical Lecture on a Case of Hypertrophic Pulmonary Osteo-arthropathy."

CASE 60.—Davis, 1895. Boy æt. 4½ years, who had pneumonia at age one, and since then has never been free from cough, with frequent and copious expectoration. One year after the pneumonia, his fingers and toes, wrists and ankles, enlarged. Jaws were unaffected, lower lip somewhat hypertrophied, spine straight. There was copious effusion, probably purulent, into left pleural cavity. Wrists considerably thickened, but their movements unaffected. Metacarpals normal, first phalanges much enlarged, and terminals enormous and characteristically broadened and thickened, with parrot nails.

Similar changes in feet. Lower ends of femurs much enlarged, but no fluid in knee-joints. No joint tenderness.

Ref. 'Journ. Amer. Med. Assoc.,' June 1st, 1895. 'Brit. Med. Journ. Epit.,' October 12th, 1895.

CASE 61.—Thayer, 1896. Married woman æt. 28. Admitted July 12th, 1892. Caught cold fifteen weeks before admission. Six weeks before admission noticed ankles getting thicker, and this has continued. Some pain in legs on walking.

*On admission.*—Signs of left pleuritic effusion, which cleared up in nine days. Finger tips clubbed with incurved nails. Lower third of tibiæ enlarged, especially at level of malleoli. No œdema or marked glandular enlargement. Face expressionless, otherwise unaltered. Urine normal. No tubercle bacilli in sputum.

Ref. 'New York Med. Journ.,' January 11th, 1896. "Hypertrophic Pulmonary Osteo-arthritis and Acromegaly."

CASE 62.—Thayer, 1896. Man æt. 20, seen March 13th, 1893. Seven weeks before, after exposure to weather, caught a chill followed by fever and a severe cough. In bed three weeks, with (it was stated) pneumonia. Since then intermittent chills, fever, and sweating, with occasional pain in right chest.

*On examination.*—Right pleural effusion, probably purulent. Would not come in. Two years later, March 18th, 1895, applied for admission. History of persistent cough since first attack, with copious expectoration in paroxysms, and recently copious hæmoptysis. Spine noticed to be crooked last nine months. Last six months could not lace his boots, and noticed increase in size of wrists and ankles. For four months has had pain in knees on kneeling. For two months has been unable to grasp small objects firmly. Never any pain in hands or feet. His mother has told him that his hands were enlarged ever since he was a child, but that he never had any difficulty in getting stockings or shoes to fit him.

*On examination.*—A tall man, with very marked contraction of right side of chest, slight scoliosis, contracted lung, and much-thickened pleura (confirmed by puncture).

Sputum tenacious, containing blood but no tubercle bacilli. Heart displaced, with a systolic murmur over aortic area. Blood nearly normal (Hb 48 per cent.). Urine 1020, trace of albumen, a few granular and hyaline casts, and crystals of calcium oxalate. Face unaltered. Enormous hands, with considerable expansion above wrists; carpus unchanged, metacarpus thickened, especially distally; fingers long and massive, with markedly clubbed hyperextended ends, and large, smooth, much-curved nails. Arms not muscular. Humerus normal. Lower third of tibiæ enlarged and massive; tarsus unaffected, metatarsus partly enlarged, toes somewhat massive and slightly clubbed; lower end of femora thickened.

Under observation eight months, during which there was steady increase of bony enlargement in and near hands and feet; temporary effusion into knee-joints; enlargement of sternal ends of clavicles, and thickening of right median cephalic vein.

Ref. loc. cit.

CASE 63.—Thayer, 1896. Man aged 31, admitted September 27th, 1895. In good health until January, 1890, when laid up with pneumonia followed by pleurisy. A few weeks later suddenly brought up rotten-egg pus, said to be from an abscess in left lung. For two years after was in good health. In October, 1892, laid up with weakness and another attack of profuse expectoration. Next year went into the country to recruit. Cough persisted, but after repeated examinations no tubercle bacilli have been found. During the summer of 1894 noticed from time to time stiffness in knee and chilly sensations in calves of legs. In October or November, 1894, began to notice enlargement of insteps; in December enlargement of finger ends; in January, 1895, enlargement of wrists, associated with considerable dull pain, worse on movement. This pain ceased after two months. At the same time he noticed painless increase in size of ankles. In June, 1895, knuckles were first noticed to be enlarged. Since then has had no pain except in knees, which are very large. *On admission.*—Contraction of left side of chest with râles and dulness at base, lateral



curvature, enlargement of lower end of femur, heads of tibiæ, ankles, and adjacent bones, also of those near wrists, effusion into knee-joints, long clubbed toes, clubbed finger tips, enlarged interphalangeal joints, large much-curved nails.

Ref. loc. cit.

These three cases are very fully reported, together with a fourth case of ordinary acromegaly. Numerous measures and good illustrations are also given.

CASE 64.—Walters, 1896.

Ref. 'Brit. Med. Journ.,' February 8th, 1896. 'St. Thomas's Hospital Reports,' vol. xxiv.

*Class II.—Cases in which only the ends of fingers and toes were involved.* Nos. 1, 15, 20, 21, 37, 44—48, 65, 66.

CASE 1.—M. Bailly, 1862. Described as Hippocratic fingers. Male æt. 21. Glandular scrofula age eight; pleurisy age nine, becoming purulent and leaving a fistula, which remained open for ten years. A little cough with purulent expectoration lasted the whole time, and had never completely ceased at age twenty-one. During the year following his pleurisy, his finger and toe ends began to swell. Enormous enlargement of terminal segments, with large strongly curved nails, raised at roots by semi-fluctuating mass. Skin of pulp rose or bluish in colour, not tense. No œdema. No evidence of bony enlargement.

Ref. "Recherches à l'occasion d'un fait de doigt Hippocratique," 'Comptes Rendus de la Soc. de Biol.,' 1862, t. 4, ser. 3, p. 48. Case 1 of Lefebvre.

CASE 15.—Moussous, 1890. Girl æt. 14, suffering from left empyema. Antiseptic injections of corrosive sublimate on three occasions, with a month's interval. Amelioration and cure after production of pneumothorax. Pulmonary tuberculosis of the same side without grave symptoms. A few days after the empyema began, the finger ends became large and red, and nails very large and much curved in both directions. The finger condition increased *pari passu* with the pleural trouble, and diminished with the diminution of

discharge. Apparently no change in tuberculosis of lung. Finger ends lost their redness.

Ref. "Du traitement de la pleurésie purulente par les injections intra-pleurales de sublimé," 'Journ. de Méd. de Bordeaux,' Oct., 1890, Nos. 10 and 11. Case 15 of Lefebvre ; Case 3 of Jamet.

CASE 20.—Chauffard, 1891. Man æt. 30. In October, 1882, pleurisy, which became purulent after three serous tappings. Esslander's operation performed ; obliteration of pleural cavity and complete occlusion in November, 1883. After the operation enlargement of finger ends. In 1888, after an effort, a pleural fistula formed. In May, 1890, entered hospital with diarrhœa and loss of strength. Ends of fingers and toes enlarged, and the former hyperextended. Large doubly-curved nails. Alcoholic tremors of fingers. Large liver. Copious albuminuria. Heart apparently normal. Slight sensation of heat in feet, worse in evening. Shivering. Night sweats.

Ref. Lefebvre's Thesis, Case 14 ; Jamet's Thesis, Case 6.

CASE 21.—Marie, 1891. Man æt. 51. Family history of phthisis. Alcoholism. Good health until three years previously, but slight cough for twenty years. In 1873 three abscesses in thoracic wall, one at level of spine of scapula, another at right breast, a third in axilla. The last still open. In 1876 two more abscesses in groin. Abundant expectoration last eighteen months. Suddenly felt much weaker, so entered hospital. Chest condition regarded by Marie as bronchial dilatation. Swollen hyperextended finger ends. Very large watch-glass nails, with long raised roots, longitudinally striated and readily split.

Ref. Lefebvre's Thesis, Case 16.

CASE 37.—H. Gillett, 1892. Girl æt. 7¼. In February, 1891, quinsy. In June, bronchitis and pleurisy. In July, empyema, diarrhœa, vomica, pulmonary tuberculosis. Bony enlargements of finger ends, with curved nails and a similar condition in toes, noticed in August ; noticed "for some time past" by the mother. January, 1892, great improvement

and less deformity. Attack of influenza. February, 1892, deformities nearly gone. Still signs of pulmonary tuberculosis, but no pus in pleura, and great improvement in general health.

Ref. "Ostéo-arthropathie hypertrophiante pneumique de P. Marie chez l'enfant," 'Ann. de la Policlinique de Paris,' March, 1892, No. 3. Jamet's Thesis, Case 5.

CASE 44.—M. Moizard, 1893. Boy æt. 6. Seen on January 15th, 1893, suffering from right basic pleuro-pneumonia. On April 20th fever and vomica; still signs of pleurisy; well-marked clubbing of finger ends, with large, friable, pink watch-glass nails.

Ref. "Deux observations d'ostéo-arthropathie hypertrophiante pneumique, dans le cours de pleurésies purulentes, chez des enfants; forme aiguë et curable," 'Bull. et Mém. de la Soc. Méd. des Hôp. de Paris,' 3 S., tome x, May, 1893, pp. 359—365. Jamet's Thesis, Case 2.

CASE 45.—Moizard, 1893. Girl æt. 5. In December, 1892, had left pneumonia, from which she seemed to completely recover. Soon after this, clubbing of fingers was noticed. In February, 1893, dyspnœa; pus found in pleura, containing pneumococci and a few streptococci. Finger ends large and pink, with large watch-glass nails. Slight affection of big toe-nails. Improvement of the finger ends with the cure of the empyema.

Ref. 'Bull. et Mém. de la Soc. Méd. des Hôp. de Paris,' 3 S., tome x, May, 1893, pp. 359—365. Jamet's Thesis, Case 1.

CASE 46.—Marfan, 1893. Child with empyema cured by pleurotomy.

Ref. preceding case ('Bull. et Mém. de la Soc. Méd. des Hôp.').

CASE 47.—Marfan, 1893. Child with bronchial dilatation. Ref. preceding case.

CASE 48.—Marfan, 1893. Child with cystitis and right pyelonephritis, which followed after catheterism during

typhoid fever. *Bacterium coli commune* found in the urine. The cystitis was cured by borax, but there were several returns. No affection of respiratory passages or vascular apparatus. During the month previous to report, characteristic finger ends and nails developed.

Ref. preceding case.

CASE 65.—Man æt. 36, under Dr. Hillier, admitted in November, 1892, with empyema. Operated upon successfully. A year later, "rheumatic" swellings of knees, ankles, and small joints of hands. In 1894 clubbing of finger ends, probably partly bony, with huge much-curved nails. (Unpublished.)

CASE 66.—Man æt. 55, under Dr. Pidcock. History of pneumonia and influenza. Very chronic phthisis, mainly of one side, with thickened pleura. Finger ends characteristic in appearance, but no evidence of bony change. (Unpublished.)

*Class III. Cases which are doubtful or insufficiently described.*—Nos. 2—6, 11, 14, 42, 51, 55, 56, 58, 67.

CASE 2.—Friedreich and Erb, 1867 and 1888. Man æt. 18, previously in good health, noticed that his feet were getting larger, and soon after his legs and knees. Also had slight fatigue in walking. About two years later his hands began to grow, so that work became for a time impossible. There was a sense of tension, but no pain. At age twenty-six he had wide-spread bony enlargements affecting the usual situations in upper and lower limbs, also sternum, ribs, scapulæ, clavicles, crests of ilia, spines of lower cervical and upper dorsal vertebræ, alveolar and maxillary processes of malar and palate bones, hyoid bone, but not the cranial vault. The cartilages of ears, eyelids, and epiglottis were enlarged, nails enormous, skin of hands and feet slightly thickened, muscles flaccid and ill-nourished. Special senses and intellect unaffected. Twenty years later he had chronic bronchitis and articular rheumatism of right wrist and feet. Twenty-six years later the alveolar process of upper maxilla was thickened, the lower jaw unaffected; spine kyphotic;



eyelids hypertrophied; tongue not enlarged; joints freely moveable, without effusion or periarticular thickening. Sight slightly affected, but fundi normal. A year after this he died.

*Post-mortem.*—The hypophysis cerebri and sella turcica were found not enlarged. The bony enlargements in hands diminished progressively towards the periphery. There were extensive visceral changes, including adherent pleuræ and pericardium, broncho-pneumonia, emphysema, myocarditis, and chronic interstitial nephritis; the brain was normal; there was hyperplasia of fibrous elements around the peripheral nerves, vagi, and sympathetics, and endoarteritis obliterans of the small arteries and veins of muscles, nerves, and skin. The skin was thickened in both derma and epidermis, the walls of sudiparous glands thickened, with increase of connective tissue in derma, subcutaneous tissue, and muscles.

Ref. N. Friedreich, 'Vers. deutscher Naturforscher und Aerzte zu Frankfurt,' September, 1867, "Hyperostose des gesammten Skelets." Friedreich, 'Virch. Arch.,' xliii, 1868, p. 83. W. Erb, 'Deutsches Archiv für klinische Medicin,' 1888, xlii, 4, p. 295, "Ueber Akromegalie." W. Erb, 'Vers. deut. Naturf. und Aerzte zu Heidelberg,' Sept., 1889. J. Arnold (for post-mortem examinations), 'Ziegler's Beiträge zur pathol. Anat. und allg. Pathologie,' 1891, x, p. 1. Lefebvre's Thesis, Case 2.

This much-disputed case is regarded as Acromegaly by Arnold, Erb, and Virchow, but claimed as Osteo-arthropathy by Marie and the French school (see p. 14).

CASE 3.—Friedreich and Erb, 1867 and 1888. A younger brother of the preceding who had a similar history, the changes beginning at age seventeen while he was in perfect health. The deformities became even more marked, but health and strength remained better than in his brother's case. The maxillæ and spine were unaffected. Genitals not enlarged. No post-mortem has yet been published.

Ref. Friedreich and Erb, loc. cit. Lefebvre's Thesis, Case 3.

Probably belongs to the same class as Case 2.

CASE 4.—Smirnoff, 1888. Man æt. 23, the subject of hereditary syphilis, but without pleuro-pulmonary disease. Deformity of the hands began at age nine. Three or four years before admission he had a gumma of the hard and soft palate, which cicatrised under the influence of KI and calomel. When seen, the four fingers in each hand were bent and ankylosed at interphalangeal joints, the last phalanges of all fingers and toes flat, broad, and rounded, the former with very broad, big nails. The joints of elbows, hands, feet, and knees were very large and deformed, the diaphyses of forearms, thighs, and leg bones much elongated; these and the diaphyses, carpus, and tarsus also hypertrophied. Face flattened from above with prominent malars.

Ref. 'Monatsheft für praktische Dermatologie,' 1888, vii, p. 1, "Ein seltener Fall von ausgebreiteter symmetrischen Verunstaltung auf grund hereditärer Syphilis."

Probably not osteo-arthropathy, but bone and joint lesions of hereditary syphilis.

CASE 5.—Elliott, 1888. Man aged 27, in good health until sixteen months before admission, when he began to feel pains in knees and shoulders. Six months before admission his hands and feet were found to be enlarged.

*On admission.*—There was œdema from finger ends to halfway up humerus, enlargement of phalanges, metacarpal bones, radius, and ulna, swelling from toes to knees, with enlarged bones and knee-joints; clavicles and some of the ribs thickened on one side of the body; head and jaw unaffected. Effusion in right pleura; multiple nodules on skin regarded as sarcomatous. He died nine months after the bony enlargement had been noticed.

Ref. 'Lancet,' 1888, i, p. 170, "Multiple Sarcoma associated with Osteitis Deformans." Lefebvre's Thesis, Case 5.

This case was, I think, neither Osteitis Deformans nor Acromegaly. Lefebvre regards it as Osteo-arthropathy, but this appears to me not proven.

CASE 6.—Fraentzel, 1888. Man æt. 58, admitted in a late stage of pulmonary phthisis, which seems to have begun

at age twenty. Already in infancy his extremities were enormous, and his hands were of such a size that he was obliged to become a wheelwright. No relative (except one of his two daughters) was affected in this way. He was addicted nearly all his life to alcoholism and polydipsia, so that while in hospital he drank several litres of water a day in addition to his allowance of alcohol. No albuminuria or glycosuria.

*On admission.*—Large nose and maxillæ, lips like pads, cheeks like pouches, ears normal, uvula and adjacent parts large and cyanotic, soft parts of the head much thickened; the lower part of the forearm notably thickened, wrist very big, hands shapeless, soft parts in both fingers and palmar region strongly swollen and notably pasty to touch; fingers and especially nails colossal; feet similarly altered; articulations notably enlarged and thickened, metatarsals and toes attracting attention by their size. Slight kyphoscoliosis, and decided prominence of the sternum.

*Post-mortem examination* by Langerhans showed that the pituitary body was not enlarged; cranial vault thickened with adherent dura mater; tongue rather large; thyroid not developed; heart enlarged and dilated with adherent pericardium.

The *daughter* at age eleven was a healthy girl, with enlargement of hands and feet and adjoining parts of limbs.

Ref. Fräntzel, 'Deutsche med. Wochenschrift,' 1888, xiv, p. 651. Virchow, *ibid.*, 1889, xv, p. 73. "Vorstellung eines Falles und eines Skelets von Akromegalie," Virchow, 'Berl. klin. Wochenschrift,' 1889, xxvi, p. 81. Virchow, "Lect. on Acromegaly," trans. by Kanthack, 'Ill. Med. News,' 1889, ii, p. 241 (plate). Lefebvre's Thesis, Case 6.

Another disputed case, regarded by the German school as Acromegaly, and by the French as Osteo-arthropathy. (See p. 14.)

CASE 11.—Gouraud-Marie, 1889. A man of 50, applied for the relief of a trifling congestion at the base of one lung, which was well in a few days. He had large hands, the enlargement affecting especially the wrist and fingers, the phalanges cylindrical, the middle relatively more enlarged

than the proximal, and the terminal segment of the finger most of all, with well-marked parrot-beak nails and drum-stick finger ends. There was characteristic bony enlargement near wrist and elbow, and corresponding changes in the lower limbs. Kypho-scoliosis with contraction chiefly of the left side of the chest, said to date back five or six years. No enlargement of cranial vault, or of facial bones, excepting a thickening of alveolar border of superior maxilla. No alteration of tongue, lips, ears, or external genitals. No effusion in any joint, but several show limitation of movement and cracklings on passive motion. No affection of sight. On inquiry there appeared to be no family tendency to similar deformities; he had "always been as he was," and had never been ill excepting an attack twelve years previously of intermittent fever. He was refused for military service on account of his big feet.

Ref. 'Bull. de la Soc. Méd. des Hôp.,' 1889, Nos. 15, 21. 'Rev. de Méd.,' 1890, p. 1, "De l'Ostéo-arthropathie hypertrophiante pneumique." Lefebvre's Thesis, Case 9.

A case with the appearance of Osteo-arthropathy, but without any history of chest disease to account for it, unless the "intermittent fever" was empyema. This, Marie's original case, was first regarded by him as Acromegaly, but subsequently withdrawn from that group.

CASE 14.—Renner, 1890. Man æt. 45; relatives free from deformities. No history of syphilis. Had typhus during the war of 1870, and since then has been subject to attacks of diarrhœa. Illness began two and a half years ago with lassitude, pains in abdomen radiating to genitals, fissures of the tongue, moderate dyspnœa and functional dysphagia; one and a quarter years ago, pains in hands and feet, followed by enlargement. The dysphagia varied inversely with the swelling of extremities. For some time past has had giddiness and headache every morning, and can do no heavy work owing to weakness and difficulty in walking. Hair has become dry and brittle. Sexual functions lost.

*On examination.*—Pigmentation of face and hands. Skull, jaws, tongue, sight, smell and taste, and intellect apparently unaltered, but ears thickened in places, some deafness, and



voice somewhat altered. Bony enlargement of hands and feet with adjoining parts of forearm and leg, also near elbows, knees, iliac crests, collar-bones, ribs, acromion and spines of scapulæ, ensiform process, and dorso-lumbar spinous processes. Movements of hands and fingers clumsy and restricted. Skin generally normal, excepting over parts of hands and feet, where it is thickened. Some clubbing of fingers and toes, but apparently no elongation. Pulse, urine, and viscera of chest and abdomen apparently normal.

Ref. 'Ver. bl. der pfälzischen Aerzte,' August, 1890, No. 8, p. 164.

Arnold regards this as a case of "secondary osteitis." It appears to me to belong to the "intermediate group," as the enlargement was primary, the tongue was fissured although not enlarged, and the cartilages of ears and perhaps also of larynx thickened; while, on the other hand, the clubbed fingers and bony enlargement near joints remind one of osteo-arthropathy.

CASE 42.—Stembo, 1893. Woman æt. 56, who was subject to chronic bronchitis, and six years before admission had pneumonia, followed by pains in the joints of hands and feet, tingling in finger ends, and also enlargement of hands and feet.

*On admission.*—Her malar bones were prominent; nose, ears, lips, lower jaw, parotid glands, tongue, and uvula, all enlarged; larynx and skull unaffected; no ocular symptoms, nor any head pains. Thyroid gland shrunken; lungs emphysematous; abdominal viscera apparently normal. Low lumbar kyphosis, projection of lower part of sternum and chest; thickened clavicles; hands hypertrophied, with clubbed finger ends and large curved split nails, wrist and lower part of forearm also enlarged. Similar deformities in feet and lower part of legs. Some other not specified joints are also affected.

Ref. 'St. Petersb. med. Wochenschrift,' 1893, No. 3, p. 21, "Ueber Osteo-arthropathie hypertrophiante pneumique." For a paper on the subject generally see Stembo, 'St. Petersb. med. Woch.,' 1894, xi, p. 383, "Ist die Osteoarth. hypertro. pneumique eine Krankheit *sui generis*?"

Notwithstanding the description and name given to the case, the published illustration shows hands and feet more like Acromegaly than Osteo-arthropathy; and this is supported by the affection of many parts which usually escape in the latter disease. It is probably a variety of Acromegaly (see p. 14).

CASE 51.—Thorburn, 1893. A policeman, æt. 30, who died of rapid phthisis, attributed to exposure to weather a few months previously. His feet and hands had always been large, but had gradually increased in size since his general growth had ceased. When seen there was bony enlargement of hands and feet and adjacent parts of the limbs.

Ref. 'Brit. Med. Journ.,' 1893, i, p. 1155.

This may have been either Osteo-arthropathy or Acromegaly. From the history the latter appears more probable.

CASE 55.—Legrain, 1894. The urinary condition of this case was recorded in the 'Ann. des Malad. des Organes Genito-urinaires,' but owing to the courtesy of Dr. Legrain I am able to publish a complete record of the case, which will be found at page 68, together with an unpublished note on other cases met with by him in the Sahara. Legrain's case presented enlargements of extremities resembling those of ordinary Osteo-arthropathy, but which came on in early life (age nine) without apparent cause. The heart and lungs seem to have been sound; and there is distinct evidence of changes in the visual fields. For these reasons the case appears to me to belong to Acromegaly, or to the Hagner group.

Ref. 'Ann. des Mal. des Org. Genito-ur.,' Paris, 1894, xii, p. 109, "Notes sur la sécrétion urinaire d'un cas d'Ostéo-arthropathie hypertrophiante pneumique." Also these reports (p. 68).

CASE 56.—Posmantir, 1894. Man æt. 21, admitted 17th May, 1890, for tumours in parotid region, weakness, and inability to use his hands. Family history unimportant. Patient had always been in good health. Age fourteen had tertian ague, which was cured, but returned last

summer. No history of syphilis, rheumatism, or alcoholism. During autumn of 1889 he noticed a growing tumour, of the size of a nut, in right parotid region, with obstruction of right nostril. After two months another appeared in left parotid region, which increased more slowly. At the same time his hands and feet were noticed by his companions to be getting larger, and his shoes began to be too small for him. Could work readily at mending sewing-machines until this year, when he could no longer grasp his tools or clench his fists; and getting weaker he entered hospital.

*On admission.*—Features expressionless, skin of face finetextured; large hanging lower lip, small ears, sensitive to pressure; large and somewhat pointed nose. Respiration entirely buccal and noisy. Skull not enlarged; teeth meet; lower jaw not enlarged; jaws cannot be properly separated owing to tumours. That in right parotid region extends nearly down to clavicle, involving the vasculo-nervous bundle of the neck, the salivary glands, and a great part of the palatine vault. The left parotid tumour is much smaller. Thyroid body enlarged. Shoulder-joints normal. Elbow-joints stiff, but not swollen; complete extension is painful, but quiet passive movements are painless. The forearm is enlarged in its lower 6 or 7 cm., mainly from enlargement of the ulna, which gives it a deformed appearance. An exostosis, size of a nut, is felt on lower third of radius. The hand, although enlarged, is not as much so as the lower end of forearm. Palm more enlarged than dorsum. Palmar folds deep. Fingers seem long, and have drumstick appearance; terminal segments with large curved nails, like a parrot's head. These changes are best seen in the thumbs. Fist cannot be clenched; movements of hand are difficult. Muscles of thighs wasted. Knees swollen and a trifle stiff. Legs somewhat like forearms, and ungual phalanges of big toes enlarged with large nails. Patellar reflexes abolished. Skin of thorax has no large hairs. Nipple and areola swollen, of the size of a 5-fr. piece. False ribs of left side enlarged and prominent, causing unilateral deformity. Clavicles very much thickened, especially at outer ends. Sternum and scapulæ not enlarged. No spinal kyphosis

or lordosis, but the spinous processes are enlarged, especially in upper dorsal and lumbar regions. Sacrum large and prominent. Thoracic organs normal. No retro-sternal dullness of Erb. Genital organs little atrophied, excepting the left testicle, which is much wasted. Sensitiveness of skin abnormally great, touching an object causing pain. No zone of anæsthesia. Thermal and tactile senses preserved. Height 168 cm. Dynamometer—right hand 22, left hand 25. Very marked muscular wasting. Patient left the hospital, but re-entered some months later in a dying state.

*Post-mortem* (by Prof. Babech).—Carcinomatous tumours in parotid glands, involving base of skull. Pituitary body much enlarged. Beyond the skeleton little remarkable was found. Lungs were absolutely normal.

Ref. 'Spitalul,' Bucharest, 1894, No. 1, p. 8, "Un cas de Osteo-arthropathie hypertrophiante pneumique."

The enlargement of the pituitary body in this case is quite exceptional in Osteo-arthropathy. Possibly the case was one of Acromegaly or of hypertrophy of nervous origin.

CASE 58.—Murray, 1895. Painter æt. 40, who at age of twenty-seven was said to be phthisical, and sent to South Africa. At age thirty-four the terminal phalanx of each thumb enlarged, and the nail became discoloured. Soon after, the terminal joint of left middle finger and the same joint of ring finger became enlarged and painful. Toes began to increase in size about the same time. When seen there was Dupuytren's contraction in the palm of each hand, connected with the ring finger on right and middle finger on left. The feet were enlarged, especially the metacarpophalangeal joint of left big toe.

Ref. 'Brit. Med. Journ.,' 1895, i, p. 293, "Clinical Remarks on Cases of Acromegaly and Osteo-arthropathy."

From the illustration given it appears that the nails are not convex, and the enlargement of thumbs is chiefly next the interphalangeal joints. The overgrowth of the right ring finger mainly affects the last joint, and the end of this phalanx is relatively small. The same is true of the left middle finger. The condition is not symmetrical. Seeing that all the changes may readily be explained as the result



of gout, and none of the usual characteristics of osteo-arthropathy are to be found in the illustration or description, it is somewhat surprising to read that the case has been judged by a very high authority to be a case of Osteo-arthropathy complicated with gout. I am unable to find the reasons for this decision.

CASE 67.—Verstraeten, 1889. Marie appears to regard one of Verstraeten's two cases as Osteo-arthropathy. Souza-Leite regards one of these as undoubted Acromegaly, and the other as probably Acromegaly. I can find no reason for regarding either as Osteo-arthropathy.

Ref. 'Rev. de Méd.,' 1889, p. 377.

### *Bibliography.*

'Ann. des Mal. des Org. génito-urinaires,' Paris, 1894, xii, p. 109, E. Legrain, "Notes sur la secr. urin. d'un cas d'Ostéo-arth. hypertr."

'Ann. de la Policlinique de Paris, 1892, No. 3, p. 93, H. Gillet, "Ostéo-arth. hypertr. pneum. de P. Marie chez l'enfant."

'Arch. gén. de Médecine,' 1894, ii, p. 129, A. Demons and W. Binaud, "Sur un cas d'Ostéo-arth. hyp. pn. traitée par des injections de liquide pneumique."

'Amer. Med. Assoc.,' Journal of the, 1895, xxiv, p. 845, Davis.

'Bull. et Mém. de la Soc. Méd. des Hôp. de Paris,' 1889, 3 ser., vi, p. 381, Gouraud, "Un cas d'Acrom.," 1893, 3 ser., x, p. 359, Moizard, "Deux observations d'Ostéo-arth. hyp. pn. dans le cours de pleurésies purulentes, chez des enfants, forme aiguë et curable." (Discussion), Marfan.

Bra, M., 'La Méthode Brown-Séguard,' "Thérapeutique des tissus par les extraits d'organes animaux."

'Berl. kl. Woch.,' 1889, xxvi, p. 81, Virchow ('Berl. Med. Ges.),' "Vorstellung eines Falles und eines Skelets von Akromegalie." 1889, xxvi, p. 238, Ewald ('Berl. Med. Ges.'). 1890, xxvii, p. 1183, C. Gerhardt, "Ein Fall von Akr."

\*'Beiträge zur path. Anat. und allg. Path.,' Ziegler's, 1891, x, p. 1, J. Arnold.

'Brit. Med. Journ.,' 1890, i, p. 662, H. Waldo, "Acromegaly." 1893, i, 1155, W. Thorburn, "Three Cases of Hyp. Pulm. Osteo-arth." 1893, ii, 1215, Jas. Kerr, "Pulm. Hyp. Osteo-arth." 1893, ii, p. 14, F. A. Field, "Acr. and Hyp. Pulm. Osteo-arth." 1895, i, 293, G. R. Murray, "Clinical Remarks on Cases of Acr. and Osteo-arth." 1895, i, 1257, J. W. Springthorpe, "A Clin. Lect. on a Case of Hypert. Pulm. Osteo-arth." 1895, Epit., October 12th, Davis. 1896, i, 329, F. R. Walters, "A Case of Pulm. Hyp. Osteo-arth." 1896, ii, 921, Thorburn and Westmacott. 1896, ii, 57, 116, R. J. Godlee, "Bone and Joint Changes in connection with Thoracic Disease." 1896, ii, 1417, *ibid.*

Coles, Herbert D., 'Inaug. Diss.,' Edinburgh, 1896.

'Comptes Rendus de la Soc. de Biologie,' 1862, iv, ser. 3, p. 58, Bailly, "Recherches à l'occasion d'un fait de doigt Hippocratique."

'Deutsches Archiv für kl. Med.,' 1888, xlii, 4, p. 651, W. Erb, "Ueber Akromegalie."

'Deutsche mediz. Woch.,' 1888, xiv, p. 651, O. Fraentzel ('Berl. Med. Ges.').

'Deutsche mediz. Woch.,' 1889, xv, p. 73, Virchow ('Berl. Med. Ges.'), "Vorstellung eines Falles und eines Skelets von Akromegalie."

'France Méd.,' 1889, Nos. 68 and 69, i, pp. 782, 793, P. Sollier, "Sur une affection singulière du système nerveux caractérisée essentiellement par de l'hypertrophie des extrémités des membres, des phénomènes paralytiques, et des troubles variés de la sensibilité."

Freytag, Ad., 'Dissertation,' Bonn, 1891, "Ueber die Trommelschlägelfinger."

'Gazette des Hôpitaux,' 1892, p. 685, Orillard.

'Gazette Hebdomadaire de Médecine et de Chirurgie,' 1890, No. 20, p. 231, Thibierge, "Sur quelques formes d'ostéopathies systématisées."

Grasset and Rauzier, 'Traité pratique du Système Nerveux,' 1894, 4th edit.

'Illus. Med. News,' 1889, ii, p. 195, R. Saundby, "A Case of Acromegaly." 1889, ii, p. 241, Virchow, trans. Kanthack, "Acromegaly."

'Intern. Journ. Med. Sci.,' 1892, ciii, 6, p. 657, F. A. Packard, "A Case of Aer. and illustr. of two allied Conditions."

Jamet, 'Thèse de Paris,' No. 221, 1893, "De l'Ostéo-arth. hyp. pn. en particulier chez les enfants."

'Journal de Médecine de Bordeaux,' 1890, Nos. 10 and 11, Moussous, "Du traitement de la Pleur. purul. par les injections intrapl. de Sublimé."

'Journal for Nervous and Mental Diseases,' 1892, p. 917; 1893, pp. 48, 129, Collins.

'Lancet,' 1888, i, 170, G. F. Elliott, "Multiple Sarcoma associated with Osteitis Deformans."

Lefebvre, 'Thèse de Paris,' No. 130, 1891, "Des déform. ostéo-artic. conséc. à des mal. de l'app. pleuro-pulm. ; Ostéo-arth. hyp. pn. de Marie."

? 'Medical Age,' Detroit, 1892, xii, 157, Merz.

'Memorabilien,' 1885, p. 449, C. Mettenheimer (West Mecklenburg Surgeons' Society), "Der partielle Riesenwuchs als vorübergehende Krankheitserscheinung."

'Monatsheft f. pr. Dermatol.,' 1888, vii, p. 1, G. Smirnoff, "Ein seltener Fall von ausgebreiteter symmetrischer Verunstaltung auf grund hereditärer Syphilis."

'Münchener med. Woch.,' 1892, xxxix, No. 22, p. 399, P. J. Möbius, "Zur Lehre von der Osteo-arth. hypert. pneum." 1892, xxxix, No. 36, p. 633, H. Schmidt, "Ueber die Beziehung der Syphilis zur Osteo-arth. hypert. pneum."

'New York Med. Journ.,' 1896, lxiii, p. 33, W. S. Thayer, "Hypert. pulm. Osteo-arth. and Acromegaly."

? 'N. Montpelier Med. Suppl.,' 1893, ii, pp. 647—661, Rauzier.

'Progrès Médical,' 1893, i, p. 384, Moizard. 1896, 3 ser., iii, p. 389, Walters.

'Revue de Médecine,' 1889, p. 377, C. Verstraeten. 1890, p. 1, P. Marie, "De l'osteo-arth. hypertr. pneumique." 1890, p. 361, Spillmann and Haushalter, "Contrib. à l'étude de l'Ostéo-arth. hyp. pneum." 1891, p. 30, G. Rauzier, "Un cas d'Ostéo-arthr. hyp. d'origine pneumique." 1892, p. 231, Orillard, "Un cas d'Ostéo-arthr. hyp. pn." 1893, p. 326, Chrétien, "Un cas d'Ostéo-arthr. hyp. pn. chez une syphilitique."

'Revue gén. de Clinique et de Thérapeutique,' 1891, Jan., Barié.

'Riforma Medica,' 1893, Nos. 68 and 69, vol. i, p. 806. Alessandro Marina ('Soc. Med. Triestina'), "Osteo-artropatie ipertrofiante pneumonica parziale ed Acromegalia."

'Spitalul,' Bucuresci, 1894, No. 1, p. 8, S. Posmantir, "Un cas de Osteo-artropatie hipertrofianta pneumica."

'St. Petersburg. med. Woch.,' 1893, n. F. x, No. 3, p. 21, L. Stembo, "Ueber Osteo-arthr. hypertr. pneum." 1894, n. F. xi, p. 383, L. Stembo, "Ist die Osteo-arthr. hyp. pneum. eine Krankheit *sui generis*?"

Souza-Leite, Thèse de Paris, 1890. Syd. Soc. Transl.

'Trans. Path. Soc.,' Thorburn and Westmacott, May 19th, 1896.

'Trans. Roy. Acad. Med. Ireland,' 1890, ix, p. 64, Jos. Redmond, "A Case of Acromegaly."

'Ver. Bl. d. pfälz. Aerzte,' 1890, viii, p. 164, Renner.

'Vers. deut. Naturforscher und Aerzte zu Frankfurt a/M.,' Sept., 1867, N. Friedreich; zu Heidelberg, Sept., 1889, W. Erb.

'Virchow's Archiv,' xliii, 1868, p. 83, N. Friedreich, "Hyperostose des gesammten Skelets." \*cxxxv, p. 1, J. Arnold, "Akromegalie, Pachyacie oder Secundare Ostitis."

'Zeitschr. f. kl. Med.,' 1890, xviii, p. 193, E. Bamberger, "Ueber Knochen-veränderungen bei chronischen Lungen- und Herzkrankheiten." \*1894, xxvii, p. 86, M. Sternberg, "Beiträge zur Kenntniss der Akromegalie."

#### A CASE OF HYPERTROPHIC OSTEO-ARTHROPATHY.

Together with a Note on similar cases observed in the Sahara, by Dr. E. LEGRAIN, formerly Surgeon in the French Army (translated and published with the Author's sanction by F. R. WALTERS).<sup>1</sup>

CASE 55.—Legrain, 1894. J. M.—, æt. 29, born in a village of Morbihan, has followed since childhood the occu-

<sup>1</sup> Sent to the translator with the following note:—"Très-honoré Confrère,—Je réponds de suite à votre lettre et vous envoie l'histoire clinique du cas d'ostéo-arthropathie hypertrophique qui a fait le sujet de mes recherches sur l'excrétion urinaire dans cette maladie. Ayant été longtemps détaché en garnison dans le Sahara, j'ai rencontré de nombreux cas d'ostéo-arth. hypert., qui sûrement



pation of basket-maker. Father died of congestion of the lungs, mother from an unknown cause. He has a brother and two sisters in good health. Nobody in his family has any deformities of fingers.

At two years of age he had scarlatina. Towards seven years his parents noticed that his fingers were peculiar. At nine years he had a violent fever for several days during an epidemic of smallpox. He had been well vaccinated when a few months old, and since then had been several times unsuccessfully re-vaccinated. After this fever his hair fell out, and his fingers greatly increased in size. Until age thirteen he had nocturnal incontinence of urine. From nineteen to twenty he appears to have had several attacks of polyuria, and a very large appetite. Entering the army in 1879, he got a chancre in 1890, treated for two months with mercury internally. Nevertheless during 1891 and 1892 he does not appear to have had any secondary symptoms, so that it is not certain that the chancre was syphilitic. Numerous warts on his hands were removed during his stay in the regiment. The polyphagia had necessitated the distribution of double rations. He has now (October, 1892) been in Algeria for one and a half years. He has occasionally had benign attacks which have rapidly yielded to Quin. Sulph. When the weather is changing he complains of neuralgic fugacious pains, which may be malarial. No alcoholism.

The osteo-arthropathy of which he is the subject came on insidiously, and has gone on increasing up to the present time. It is impossible to determine its commencement. From the age of nine his parents had noticed the abnormal shape of his hands, and especially the notable thickening of his distal phalanges; and even now the patient notices that gloves and boots which fit him when they are new, become too tight after several months' wear. Military exercises have n'étaient pas pneumiques d'origine. J'avais l'intention d'en faire une note, mais n'ayant pas le temps de poursuivre cette étude, je vous envoie un petit mot à ce sujet. Si vous faites un travail sur la question, je serais enchanté de voir que ces notes puissent vous servir, et vous autorise pleinement à en faire l'usage qu'il vous plaira. Agréez, très-honoré confrère, l'expression de mes sentiments les plus dévoués, Dr. E. LÉGBAIN, Médecin à Bougie (Algérie) ancien médecin de l'armée."

been slightly painful to him. Flexion of the knees and elevation of the arms were especially trying, and could not be completely performed. The patient had often been reprimanded for this. The hand movements necessary to load his gun were difficult because of the stiffness in the wrist-joint and metacarpo-phalangeal joint of the thumb. This functional difficulty, which was the cause of his being sent to the surgeon, does not appear to have attracted any special attention from other surgeons who examined him.

*On admission* he was well built; his hands and feet at once attracted attention from the size of the phalanges. On examining more carefully it was found that his joints were distinctly enlarged. Height 1·635 metres (at the beginning of 1890 it was 1·63). Circumference of chest 91 cm. Skin dirty white, with little colour. While at rest it is dry and slightly scaly, pellicles of several square mm. being removable by the nail. As soon as he works or walks a little he perspires profusely. The hairs are little developed. On the posterior surface of the forearm one sees at most 3 per sq. cm. The hair of the head and the moustaches are blond. On the forearms the hairs can be readily pulled out without pain, and are then found to have atrophied bulbs. On the face the orifices of the sebaceous follicles are not specially dilated. The patient is not very sensitive to cold, nor has he burning sensations at night. He is often troubled with itching, and has formications in hands and feet. The muscles do not seem to be atrophied, but are too soft when contracted. This want of firmness contrasts strangely with their bulk, especially over the biceps brachii. No muscular tremors have been observed. Circumference, centre of left arm, 270 mm., right 260. The strength of the muscles does not correspond with their volume. The grasp of the hands is below the average. Nervous system: memory excellent; intelligence good, but he never could master figures at college, although he attended up to age twenty. Sight: considerable contraction of visual field. Papillary vessels a little contracted. Slaty pigmentation of fundus. Commencing infero-external staphyloma in right eye.

Right eye { M. = 3·50 D.  
V. = 2·5

Left eye { As M. = 1·50.  
V. = 1·25 (Bourget).

Other sense organs normal. Sensibility normal; no tenderness on pressure over soft parts of limbs. Patellar reflexes abolished. Pupillary reflex present. Venereal desire far from being abolished.

Upper limb: circumduction painful and incomplete. Articular ends of humerus and ulna clearly hypertrophied at elbow. Circumference of left elbow 27·5, right 26·5. Complete extension is impossible; in forced extension the forearm makes with the upper arm an angle of  $165^{\circ}$ . Antero-posterior diameter of left elbow 70, right 68. Palpation shows distinct hypertrophy of the bones of the forearm. Circumference of forearm 7 cm. below elbow-joint is on left side 280, on right 275 mm. The greater size of the left upper limb cannot well be explained by the patient's occupation; as a matter of fact he used the right arm more than the left. The ends of both bones of the forearm are clearly thickened near the wrist-joint. Circumference of right wrist 188, left 185 mm. Antero-posterior diameter of right wrist 44, left 44. Transverse diameter across styloid processes 63. Movements of radio-carpal articulation have nothing like the normal amplitude, and are sometimes accompanied by crepitations. No pain on pressure nor on forced movement. In flexion and extension of the hand on the forearm the plane of the hand cannot be brought to a right angle with that of the forearm; it always makes an angle of at least  $120^{\circ}$ . The width of the hand from outer border of second metacarpal to the inner border of 5th is 100 mm. opposite middle of metacarpus. There is notable hypertrophy of heads of first and second metacarpals on both sides. Fingers are enlarged at joints; terminal phalanges notably hypertrophied. Volume of hands to 1 cm. above styloid process of ulna, on right is 460 c.c., on left 510. Circumference of hand at junction of two middle limbs of palmar M. is 222 on right, 220 on left. Thickness of each hand measured at level of metacarpophalangeal joint of index is 32 mm., which clearly shows the hypertrophy of the heads of metacarpals. Length of fingers is normal. Medius measures 110 mm. from metacarpophalangeal joint to tip. Generally speaking, the fingers are larger at their tips than at their roots.

	Right.	Left.
Terminal phalanx of thumb, width . . .	30	30
"          "          antero-posterior diameter .	21	21
"          "          in circumference .	85	83
First phalanx of thumb, in circumference .	70	70
Terminal phalanx of index . . .	62	65
"          "          medius . . .	70	70
Nail width, thumb . . .	29	23
"          medius . . .	18	18

Movement of flexion of second phalanx of thumb on first is not as complete as it should be. Pressure on the phalanges or their articulations is not painful. Nails friable and readily split, always longitudinally. They are thin, very flexible, and can be readily curved by pressure on lateral borders.

Circumference of thorax 91 cm. Slight kyphosis. Circumference of neck 37 cm. Head and forehead well covered and retreating. Parietal eminences well developed. Ears small, with small lobules. Malar bones moderately prominent. Eyelids not thickened. Very slight thickening of ascending rami of inferior maxillæ. Teeth are separated by pretty wide intervals. They are friable and readily broken, and have small crowns. No deformity of palatal arch. Tongue normal. Clavicles and scapulæ thickened. No retro-sternal dulness. Heart and lungs normal. Larynx much developed, pomum Adami prominent.

Bicondyloid diameter of femur, 92. Circumference of knee at level of fold—left, 36; right, 37. Circumference of thigh at 15 cm. above knee-joint—left, 46; right, 48. Flexion of limb on the thigh is incomplete. Both malleoli project laterally beyond the tarsal region. Maximum circumference of big toe, 123. Bimalleolar diameter, 112. Nails as in hands.

Polydipsia, polyphagia, polyuria with increased frequency of micturition. For urinary changes see p. 9; also 'Ann. des Mal. des Org. Genito-ur., 1894, xii, p. 109.

### *Frequency of Hypertrophic Osteo-arthropathy in the Sahara.*

Since my arrival in the oasis of the Sahara, I have been struck with the unusual frequency of hypertrophic osteo-



arthropathy ; and as tuberculosis is rare, I could not at first (1893) explain the pathogenesis of this complaint, which at that time was still regarded as almost exclusively pulmonary in origin.

Which are the tribes who are subject to hypertrophic osteo-arthropathy ? I have found it amongst Psourians of the Oued Rihir, Psourians of the Oued Souf, natives of Touat and Saharan Israelites. Having had opportunity to examine a certain number of Touaregs of the Adzjers and Hoggar divisions in 1892-3, I did not find among them any examples of the disease. Nor did I meet with it among the Chambos of El Oued, a nomad tribe, whose territory is to the west of Southern Tripoli. The disease seems, therefore, to be common in the Central Sahara and the northern part of the sandy Sahara. What, then, is the pathogenesis of the complaint ? Lefebvre has shown that the bones in osteo-arthropathy have an unusually large proportion of magnesia, with diminution of lime. Now in the whole of the sandy Sahara the drinking-water is exceptionally rich in magnesia. Possibly this may account for the disease ; and this conclusion is supported by a few experiments which I made on animals. However this may be, I had to amputate a leg in a native of the Souf for a complicated fracture caused by a disproportionately small injury ; and in the bones of the amputated limb I found the lesions of hypertrophic osteo-arthropathy (Military Hospital of the Oued Souf, 1893).



# ON THE ARTIFICIAL PRODUCTION OF CERTAIN ORGANIC FORMS,

AND THE

MANNER IN WHICH THEY ARE PRODUCED.<sup>1</sup>

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BY THE LATE GEORGE RAINEY, M.R.C.S.,  
LECTURER ON MICROSCOPICAL ANATOMY AND DEMONSTRATOR OF ANATOMY  
AT ST. THOMAS'S HOSPITAL.

WITH AN INTRODUCTION

By W. W. WAGSTAFFE, F.R.C.S.

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NOTE BY W. W. WAGSTAFFE, F.R.C.S.

So many of the smaller writings of observers are lost to public view, owing to their being buried in some publication which is not easy to refer to, that I think the readers of the reports will be glad—and the public generally also—to have the opportunity of referring to a very valuable paper by George Rainey, which appeared in the 'Medical Times and Gazette' of 1868. By the courtesy of the Editors of the Reports this paper is here reprinted, together with the illustrations it contained. It appears to be a paper of very great value to all practical workers in experimental physiology.

It seems especially appropriate that this should be

Reprinted from the 'Medical Times and Gazette,' vol. i, 1868, pp. 7, 33, 61.

published in the 'St. Thomas's Hospital Reports,' because so many of George Rainey's original papers on Physiological Physics have appeared here. It gives me more than usual pleasure to be allowed to submit this article, because I remember very well rendering what assistance I could to the author in correcting the original MS. and proofs, and seeing the wonderful results obtained by him in these simple experiments. They are easily capable of reproduction by any one interested in the subject.

I have thought it best to leave the wording exactly as it was, though I am conscious that it is not always clear.

W. W. W.

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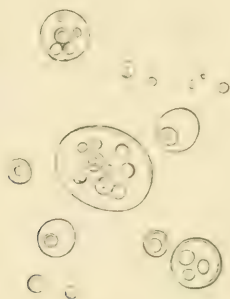
THE object of this communication is briefly to describe the processes by which certain organic forms can be produced artificially; to demonstrate the physical and chemical conditions under which their formation takes place; and to consider how far these same conditions may be regarded as present alike in the natural and in the artificial processes. And at the present time I believe no subject is of greater importance, from its bearing upon the fundamental processes of the vegetable and animal economy, and upon the views hitherto accepted of the physiology and developmental anatomy of tissues generally.

The following is a most simple process for obtaining globules:—I take a thick solution of the ordinary pale gum, such as is sold by druggists, and mix with it a strong solution of another gum of a peculiar character, only obtained from the wholesale dealers. This is of a bright reddish colour, generally rough on the surface, but very clear in the interior. It is at first remarkably soluble, but after being dissolved two or three times in water it has a tendency to gelatinise. Some of this mixture of these two kinds of gum is to be put into a closed cell; and, on being examined under the microscope, the red gum will be seen, after passing through a variety of forms, to go into permanent globules. If the mixture of these kinds of gum, after being evaporated



to dryness, be redissolved in a small quantity of water, globules will be reproduced in the solution as at the first. (See Fig. 1.)

FIG. 1.



The appearances exhibited by the red gum during its passage into perfectly globular shapes seem to indicate a difference in the qualities of the gums when in solution, not unlike that which exists between oil and water, the one appearing to exert a repellent influence on the other; and thus the ultimate particles of the red gum, which is evidently the more tenacious of the two, becoming more completely under the influence of the mutual attractions exerted between themselves, are brought into spherical forms.

Next, judging from these effects that this kind of gum is more allied to dextrine than to true gum, I made the following experiments. Inspissated solutions of filtered juice of the leaves of the houseleek (*Sedum telephium*) and that of other plants were severally mixed with very thick mucilage of white gum and examined as above described, when, in the majority of cases, the inspissated juice was seen to pass into the same forms, and ultimately into globules, just as when the red gum was mixed with the pale gum.

These experiments were afterwards performed upon dextrine which had been prepared artificially, both when mixed with the mucilage of white gum and with that of red gum, with the same results, but the effect was most striking in the case where the white gum mucilage was made the medium. (See Fig. 2.) The artificial dextrine used in these experi-

ments was obtained by mixing nitric acid and common arrowroot together in such proportions as to form a thin paste, which being left for some days passed into a state of

FIG. 2.

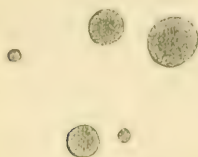
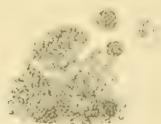


FIG. 3.



liquid sufficiently thin to allow of being filtered. The filtered fluid, formed at an early part of the process, contains a large proportion of starch mixed with the dextrine, but after some weeks all the starch disappears, and nothing but dextrine is left. The complete disappearance of the starch is indicated by the formation of nitrous acid gas. The dextrine can be separated from the acid by alcohol, and it was dextrine thus prepared and separated which was employed in the above experiments.

If a small portion of the filtered solution obtained shortly after the starch and acid have been mixed together, when a large proportion of starch is mixed with the dextrine, be mixed with thick mucilage, it will be seen to pass into globules of various sizes. These globules are very sparingly soluble in water. Their interiors are more granular, and do not contain so many or so large vacuoles as those composed entirely of dextrine. They are instantly coloured blue by iodine. For a representation of these see Fig. 3. A similar mixture of starch and dextrine can be obtained by mixing arrowroot with a perfectly saturated solution of chloride of zinc. This solution is not altered by being kept, and it is acted upon by gum precisely in the same manner as the mixture of starch and dextrine last mentioned. Starch can be formed by mixing cotton wool with a saturated solution of chloride of zinc. The solution in this process is expedited by gentle heat. In this solution, mixed with white or red gum, I have not been able to see decidedly globular forms as in the preceding experiment, arising most probably from an absence of dextrine. It is scarcely necessary to say that the starch

obtained by any of these processes is not laminated, nor does it polarise light—the spherical form in these instances being due to the tenacity of the dextrine associated with the starch, and to its immiscibility with the fluid medium in which the globules are formed.

I will next show, by a few experiments, that the physical conditions above mentioned are also alike operative on animal substances when placed under circumstances similar to those recorded of the vegetable substances.

If a film of dried white of egg, immersed in a saturated solution of chloride of zinc, be placed under a cover of thin glass on a microscope slide, it will be seen by careful examination to pass through a variety of organic forms, and ultimately to become converted into globules. As this experiment is so easy of performance, a detailed description of these appearances would be unnecessary. The time required for their completion will be some hours, or it may be days; that will depend upon the quantity and shape of the layer of dried albumen, as well as upon the quantity of the solution of the chloride of zinc. The solution of the chloride of zinc as obtained from the druggists will not be found sufficiently strong for the experiment; I have therefore employed a solution made by saturating strong hydrochloric acid with oxide of zinc, and evaporating the solution until it becomes of the consistency of thin syrup. This solution, with the excess of undissolved chloride, is to be put aside in a well-stopped bottle for use. Dried muscle, both striped and unstriped, is acted upon by this solution in the same manner as dried albumen, thus furnishing a test for the latter kind of muscular fibre, the microscopical characters of which are so unsatisfactory. White of egg which has been coagulated by heat, dried gelatine, white and yellow tissues are not materially affected by this test.

Dried albumen put into a well-stopped bottle (*i. e.* not exposed to the air, and so differing from the previous experiment) with a sufficient quantity of this solution of chloride of zinc becomes completely dissolved, but is precipitated in globules on the addition of a small quantity of water. If a small quantity of the solution of dried albumen in chloride of zinc be put under a cover of thin glass on a microscope slide,

and exposed at the edge of the cover to the air, it will, by attracting water, be seen, with a lens of a quarter of an inch focus, to deposit minute globules, some of which, by a careful and protracted examination, can be further seen to coalesce into larger globules during which all the changes of form consequent upon their coalescence into globules of a larger size can be distinctly traced. The effect of tenacity—a form only of cohesive attraction—is best displayed by commencing the examination of albumen thus acted upon by the chloride of zinc in pieces of different forms. First, if a piece of the shape of a fine thread be examined, it will soon be perceived to become of an unequal thickness in different parts, and by continuing the examination the process of attenuation of the thin parts, and of enlargement of the intermediate ones, will be seen to end in the rupture of the former, and the retraction of the broken pieces into spherules of different sizes.

Secondly, a thin flat piece examined in a similar manner will be seen first to become attenuated in some parts and thickened in others, and afterwards to pass into areolæ and globules of various sizes; and lastly, a thicker portion, having no regular form, can be seen to pass into spheres enclosing within them vacuoles filled with the fluid medium in which they were formed, as well as with solid globules of different sizes. These appearances are not confined to the compound of albumen and chloride of zinc, but can be equally well seen in the vegetable compounds described in the first part of this paper, for a representation of which see Figs. 2 and 3.

There is another form which matter entirely inorganic can be made to assume, that may be designated the tubular form. This I will now describe.

The term given to the substances capable of assuming the tubular form is “myeline;” and though these forms have of late attracted considerable attention, no reasonable account has, to my knowledge, been given of the manner in which they are produced.

As the investigation of these singular forms will be simplified by employing for their production materials in which nothing organic has ever entered, and which also in their chemical relations are among the least decomposable of



all compounds, I shall confine my account to tubes formed simply of sulphate of baryta.

A process for making these tubules which I have found most easy consists in introducing into a cell  $\frac{1}{8}$  inch or  $\frac{1}{4}$  inch in depth, filled with saturated solution of sulphate of soda, some crystals of chloride of barium, and instantly closing the cell with a cover of glass. If, immediately after the application of the cover, the contents of this cell be examined by a lens of 1 inch or  $\frac{1}{2}$  inch focus, the commencement of some tubes will be seen jutting out from the crystals, and others in process of formation. And if the examination be made an hour or two later, many tubules will be seen to have ascended from the bottom to the top of the cell, and to have described curves and coils of various degrees of complexity on the under surface of the cover, as accurately depicted in Fig. 4. The ascent of these tubules, I thought at first, might be caused by the disengagement of air either from the fluid in the cell or from the interstices of the crystals; but such was found not to be the case, as experiments were afterwards made under circumstances where there could neither have been air in the fluid nor in the crystals, with precisely the same result.

The only cause I could then assign for this fact was, that an elevation of temperature might be occasioned by the sudden formation of sulphate of baryta which takes place in this experiment. Hence saturated solutions of chloride of barium and sulphate of soda were suddenly mixed together in different quantities and in various proportions, and in every case a thermometer put into the mixture instantly rose fully  $4^{\circ}$  Fahr.

The further examination of the manner in which these tubules are formed is entirely microscopical

On carefully noticing the first effect of the solution of sulphate of soda on a crystal of chloride of barium, it was seen that the chloride crystal, more or less completely enveloped by the newly formed sulphate, had lost the sharpness of its edges and angles, showing that a portion of the crystal had undergone solution. Thus the mechanical relation of these parts is that of a saturated solution of chloride of barium contained in an investment of sulphate of baryta, and surrounded by a solution of sulphate of soda. Next a jutting

out and a rupture of the solid investment takes place, and the commencement of a tube is formed, which increases in length with considerable apparent rapidity. If the crystal from which it proceeds is small, the calibre of the tube itself will soon begin to diminish, and its form will be tapering. (See Fig. 5.) But if the crystal be large, or if a number of crystals aggregated together give origin to it, its calibre will remain

FIG. 4.



FIG. 5.

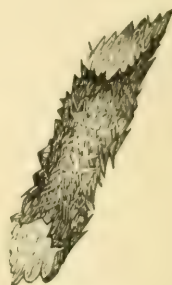


FIG. 4.—Myeline forms produced by barytic sulphate (sulphate of baryta).

FIG. 5.—Showing tubular character of the myeline forms of barytic sulphate. Surface more crystalline after long standing.

the same through nearly its entire length, which in some cases is very surprising, but still its extremity will taper. (See Fig. 4.) That these are actually tubes can be determined by examination with the microscope, especially if binocular, of such tubes as may be broken for the purpose. (See Fig. 6.)

(The crystals represented on these tubules are, I believe, sulphate of soda, the solution in which they were formed being more than saturated at a low temperature.) But this fact can be better demonstrated by mixing fine particles of any solid matter with the crystals of chloride of barium—gamboge was employed in these experiments,—when, by a careful examination with the microscope of these tubules while in progress of formation, the particles of gamboge can be distinctly seen in

their interior passing from one end to the other. The fact is most clear in those tubes which have reached the cover and are prolonging themselves along its surface.

FIG. 6.



Myeline tubes of barytic sulphate, showing crystals from which formed.

The tubular form of these tubes being shown, and also the nature of their contents—solution of chloride of barium—by the experiment last described, it will not be difficult to show in what manner they become elongated.

These tubules then, being filled with a solution of chloride of barium, furnished by the solution of this salt, which during the whole course of their growth is constantly being supplied to them at their origin, and being open at their opposite extremities, it is evident that at these parts chiefly the fresh sulphate of baryta is formed. Now if these particles immediately after they are formed are carefully watched, they can be seen to stop at the end of the tube, and to become fixed there, and thus to add to its length. This is, of course, only the ordinary effect of attraction of these particles for one another.

An addition being thus made to a tube, by the force of capillary attraction alone the fluid will be drawn along it, and in this case that direction will be taken in which the fluid

was already moving—namely, that in which it had received its first impulse on leaving the reservoir from which it had its supply.

I may notice that all the sulphate of baryta which is formed at the open end of the tube does not become joined to it, but falls down to the bottom of the cell; also that tubules can be formed by employing sulphate of potash in the place of sulphate of soda, but they are smaller; and, lastly, that if the conditions of this process are reversed, especially if sulphate of potash is employed, no tubules will be produced,—that is, if the fluid medium be the chloride of barium, and the solid the crystals of sulphate of soda, or crystals of sulphate of potash. This fact is doubtless due to the comparatively sparing solubility of these crystals.



THREE CASES  
OF  
INJURY TO ABDOMINAL VISCERA.

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By G. H. MAKINS.

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THE three cases commented upon in the following paper present little in common beyond the fact that each is an example of abdominal injury, and that although each is of a somewhat uncommon character, all of them came under treatment in the short space of two months. All three cases also throw some light on the important question of treatment in such injuries, and two of them certainly exemplify the advantage of secondary treatment over primary laparotomy when this is possible; at the same time it should be noted that in both of the successful cases the injury was moderate in degree, and in the fatal case the visceral injury was not of extreme severity, and could in no way be said to directly lead to the immediate cause of death.

CASE 1. *Rupture of pancreas; traumatic pancreatic cyst.*—  
H. W—, male æt. 24, mail-bag maker.

On August 28th the patient was riding down Kingston Hill on his bicycle when he ran into the tail-board of a cart, and was thrown violently against the handles of his machine.

The accident was followed by much shock and great pain in the upper part of the abdomen. He was taken home in

a cab, and during the night vomited four or five times, the vomit being red in colour, and consisting, the patient thinks, mainly of blood. On August 29th he was brought to the hospital.

*State on admission.*—Face pale, pulse full and strong, 80. Temp. 99°. Respiration thoracic and hurried, 30. He complains of much pain in the abdomen, and of great tenderness in the epigastric region; deep inspiration also causes much pain. Abdomen resonant throughout. Shortly after admission he vomited some milk.

August 30th.—No further sickness, but has only taken warm water since admission. Bowels confined, but flatus has been passed. The local signs are as on admission, but less marked.

During the next seven days he improved steadily, the bowels were opened by enema on the 31st, and he was put on fluid diet. He got up on September 5th, and on the 6th left the hospital, complaining only of weakness and a feeling of obstruction in the epigastrium after drinking. The temperature was 99° F. on admission, rose to 100·5° at night, for the next two evenings reached 100°, and then fell to normal.

On discharge no symptoms remained beyond some slight abdominal tenderness, but he felt sick when he got up to leave, and vomited at the ward door. He took the tram to Clapham, and proceeded to walk across the common to his home. After walking about 500 yards he vomited a second time, but on each occasion a considerable amount of wind was voided, and very little fluid or solid matter. During the first three or four days that he was at home he went out daily in a Bath chair for an airing, but at the end of the fourth day he noticed considerable throbbing pain in the abdomen; he walked about 150 yards to the doctor's, on the way being forced to stop and vomit. Some mixture was prescribed, but after taking the first dose he vomited promptly, and brought up dark brownish matter, to all appearance coagulated blood. Dr. Flynn was then sent for, and the medicine was changed, but swallowing the new mixture was again followed by vomiting, and thenceforward all medicine, except an occasional dose of morphia at night

to induce sleep, was discontinued. For the next three weeks he was kept in bed on fluid diet, and during this period he emaciated steadily, and meanwhile a swelling with pronounced pulsation developed in the epigastrium, the bowels being somewhat constipated throughout.

On Monday evening, October 8th, the swelling was very pronounced, and Dr. Flynn decided to ask me to see the patient, which I did the next day. During the interval, however, the swelling, from no apparent cause, suddenly disappeared, returning in a smaller form; and when I examined him the tumour was said to be much diminished in size. None the less, however, it was prominent, well defined, elastic, dull on percussion, and pulsated so strongly as to allow the movement to be seen even when the body was covered by the bedclothes.

Arrangements were made for his removal to St. Thomas's, and on October 10th he arrived there, when the condition was as follows:

*Forty-second day after injury.*—Patient is pale and emaciated, and complains of a tumour in the epigastrium. There is a fairly defined convex swelling extending from within an inch of the xiphisternum to the umbilicus, and occupying almost exactly the mid line of the body. It does not appear to be influenced by the movements of respiration, but pulsates forcibly in an expansile manner, and a bruit is heard on auscultation. It is dull, though not absolutely so, on percussion, somewhat tender to the touch, and feels elastic. The abdomen is otherwise normal. Pulse and temperature normal; no signs of any further visceral disease. It was decided to explore the swelling on October 12th, and meanwhile little change occurred except some variation in the area of dulness, the left extremity of the swelling becoming somewhat tympanitic. During evening of the 11th he vomited twice, voiding the contents of the stomach, which were of normal character. A simple enema was administered, and some scybala passed. On the morning of the 12th, however, he became suddenly somewhat collapsed, and on examining the abdomen the pulsating swelling was found to have entirely disappeared. Remarkable variations in local resonance were then observed over the abdomen.

areas of dulness and tympanitic resonance, the latter invading the area of hepatic dulness, which shifted rapidly and were affected by position, being noted on examination at successive intervals during the next two days.

In consequence of this complete change in the physical signs the exploratory operation was deferred, the general condition rapidly improving, and it appearing probable that the contents of the tumour had discharged themselves into some portion of the intestinal canal.

On October 13th there were already evidences of the tumour again, and pulsation was marked. On the 17th it had again become prominent, although not so large as on admission. It was convex, situated rather to the right of the median line, extended vertically from just below the ensiform cartilage to two inches above the umbilicus, and laterally from one side to the other of the subcostal arch. It was dull on percussion, the dulness to the right merging into that of the liver. The next day the prominence had increased, especially to the left. On October 19th he was straining at stool when the prominence gradually disappeared, his bowels acting freely. On the morning of the 20th the tumour was not present, but there was some dulness over the situation of the right extremity of the former swelling. Variations of a similar nature were noted during the next eight days, at the end of which time the epigastric swelling was as large as on admission, and beyond this he began to vomit occasionally, and manifestly to lose ground.

On November 1st he was anæsthetised with ether, and a 3½-inch incision was made midway between the ensiform cartilage and umbilicus in the median line. The stomach at once presented, spread out vertically and forming the anterior wall of the swelling. An opening was then teased through the great omentum, exposing a thin-walled cyst, the margins of the divided omentum were connected with the parietal peritoneum and fixed to the lower angle of the wound, a plug of double cyanide gauze packed against the exposed cyst, and the upper portion of the wound sutured with silkworm gut. The wound was dressed with cyanide gauze, and during the next two days the patient was fed by nutrient suppositories *per rectum*. Progress was un-



eventful, the temperature rising to 99.5° the second evening, and on November 3rd the dressings were removed, the plug drawn out, and the cyst was tapped with a large trocar; about 36 ounces of clear, slightly viscid, straw-coloured fluid was drawn off, six inches of drainage-tube introduced into the cyst, and the wound was dressed as before.

On examination the fluid was of specific gravity of 1016, alkaline in reaction, contained much albumen and no sugar. On trial it was found to convert proteid into peptones, to convert starch into sugar, and to saponify and emulsify fats. It was, in fact, typical pancreatic fluid, the only deficiency noted being its comparatively feeble peptonising action.

For the first two days after the operation the patient was fed with alternating nutrient suppositories and enemata *per rectum*, only warm water being given by the mouth. On the third day peptonised milk and Valentine's meat juice were given in small quantities every half-hour during the day, and the enemata and suppositories continued at night. From the fourth day onward he was fed by the mouth only.

The general condition may be dismissed with a few words, since from this time onwards no symptom to give rise to anxiety was ever noted.

Locally for the first six days there was little discharge, but on the fourth day after the cyst had been tapped, 4 ounces of fluid, giving the same reactions as that originally drawn off, was discharged by the tube on removing the dressing.

During the next four days about a pint of fluid was run off daily, besides a considerable amount of fluid which flowed into the dressings and necessitated their frequent renewal.

On November 12th a larger drainage-tube was substituted, and from this time onward the wound looked somewhat sloughy, and was evidently being acted upon by the digestive fluid, and this apparently led to suppuration of some of the stitch punctures.

He now commenced to take solid food, first bread and vegetables, and on November 18th fish and pounded chicken.

From this time until the end of January, a period of three months in all, the discharge was continuous, but varying in amount, sometimes necessitating frequent changing of

the dressing, and sometimes being quite insignificant in amount. Steady decrease at last took place, and on February 4th the tube was permanently removed. He had been sitting up for some time, and on February 9th he was able to go home firmly healed, wearing an abdominal belt, and quite well, the only complaint which he had to make being occasional gurgling in the epigastrium.

This case offered a succession of points of great interest. On his admission on the first occasion he presented the ordinary general signs of a severe abdominal contusion, but none which allowed of a definite localisation of the injury. I was inclined, without any definite ground beyond the knowledge of part of the abdomen which had received the blow, to infer that either the stomach or the duodenum was the part injured, and I saw him twice with the view of making an exploration. Steady progress in a satisfactory direction, however, negatived any surgical interference, and at the end of a week there seemed no further danger to be apprehended. This, however, illustrates an important fact to be noted in the after treatment of abdominal contusions. Thus I have twice seen instances of no less serious an injury than rupture of the gall-bladder, in which a similar favorable early course was noted, serious symptoms developing only at the end of a week, when the patients began to move about, and the case of injury to the colon included in the present paper is a somewhat less striking exemplification of the same fact.

When the patient was seen on his second admission again two points of very great interest were prominent.

First, the degree and nature of the pulsation. This was so forcible, and so truly expansile in character, that my first thought was that an injury to the celiac axis had been followed by the gradual development of a traumatic aneurysm of the vessel within the confines of the lesser sac. This idea, however, was soon discarded for several reasons: first, from the fact that pulsation had previously been noted in cases of traumatic pancreatic cyst; secondly, from the absence of evidence of anything like a distinct boundary wall; and lastly, from the almost complete disappearance of pulsation when the tumour, in the words of the patient, "disappeared."

Moreover on consideration it was evident that, presupposing a collection of fluid in or behind the lesser omental sac, the large branches of the cœliac axis would practically course through it, and hence pulsation would be natural.

The second point of difficulty was the marked variation of the size of the tumour. This occurred usually after vomiting, and the patient said that it was accompanied by a sense of something "trickling or running" within his belly. At other times the tumour became, especially at its left extremity, markedly tympanitic, at the same time gaining in prominence. These signs led to the raising of two questions: first, did the fluid in the tumour really escape or become diffused, and secondly, was it a tympanitic abscess? Although marked variations in the area of hepatic dulness and in the tympanitic note over the intestines did occur, no evidence of free fluid in the peritoneal cavity was ever obtained, hence a diffusion was excluded; but this, on the other hand, did not preclude the passage of the contents of the cyst or abscess cavity into the stomach or intestine; and, bearing in mind the early provisional diagnosis of rupture of the stomach or duodenum, it did seem a possibility.

I was now put upon the right track by reading a case related by Mr. Jacobson in his 'Operations of Surgery' (second edition, p. 862), in which the stomach formed the entire anterior bounding wall of a traumatic pancreatic cyst. It became clear that the varying enlargement of the tumour was due to pyloric or duodenal obstruction from the pressure of the cyst, and its apparent disappearance to emptying of the stomach, either by periodical escape of its contents by the duodenum or as the result of vomiting. Variation in the size of the cyst, or perhaps rather in its prominence, has, moreover, been noted in cases of spontaneously forming pancreatic cysts (see G. R. Turner, 'Lancet,' vol. ii, No. 1, p. 26, 1896).

Having come to this conclusion, the belly was at once opened, and, as is perhaps rare in obscure abdominal cases, the exploration showed the opinion formed to have been correct in every way, and the further progress calls for no further comment. As has been already pointed out in the relation of the case, the fluid was typical pancreatic secretion



in every particular, the only deficiency being its comparatively weak peptonising action, this being probably attributable in the early specimen obtained from the cyst to the admixture of peritoneal fluid with that derived from the pancreas, and in the later specimens to the fact that the energy of the trypsin had been exerted on the tissues of the wound, which, as is usually the case, exhibited clear evidence of digestion of its surface.

I regret very much that no observation exists as to the presence of sugar in the urine in the early stages, although the urine was examined for albumen; the specific gravity did not suggest the need of examining for sugar, and hence this was not tested for until some days after the operation, and then none was found on any occasion.

The development of the cyst in this case seems to have followed the trauma with somewhat unusual rapidity compared with what has been observed in former cases. The wall was well marked, although thin, suggesting its formation by the peritoneum lining the posterior wall of the lesser sac; but the cyst did not obviously encroach on the transverse mesocolon, but rather pushed forward from above its root; hence the colon was in normal position. The close adhesion of the stomach suggested that the peritoneum had been injured at the time, or inflamed by the collection of pancreatic fluid behind it: a considerable rupture of the membrane was, however, negatived by the localisation of the tumour at the right extremity and central part of the lesser omental sac.

*CASE 2. Injury to the ascending colon; intra-peritoneal abscess; incision; fecal fistula; recovery.*—P. S—, male aet. 24, railway shunter. Family and previous histories good. On August 1st, 1895, while engaged at work, he was caught between two railway waggons passing each other. He was forcibly turned round and round between the two waggons until they came to a standstill, when he dropped to the ground. He was taken to the hospital and examined, but as only superficial contusions were detected he was taken home; here, however, he was kept in bed by his medical attendant, Dr. Crossmann. The patient suffered from some pain in the abdomen, which was not of a severe character,



but not from sickness or any other symptoms pointing directly to the intestinal tract. His temperature, however, was raised above normal, reaching 100° F. or more in the evenings, and his appearance suggested internal mischief. On the 26th he was allowed to get up, and he was then seized with sudden pain in the right half of the abdomen, and his urine was found to contain a considerable quantity of blood. His bowels continued to act, though somewhat irregularly, and there was no sickness, but a distinct swelling was to be felt in the right half of the abdomen. On September 3rd he was sent to St. Thomas's Hospital by Dr. Crossman. There was some emaciation, which had been gradually increasing; the face was thin and flushed, and he complained of much pain in the abdomen, lying in the supine position, with the knees drawn up. On examination of the abdomen a large, tense, elastic swelling with ill-defined margins was found in the right half, extending almost from the lower costal margin to Poupart's ligament. It was dull on percussion, the dulness, however, not extending into the right flank, and in the lower part fluctuation was distinct. The evening temperature reached 100°. The urine contained a trace of albumen, but no blood. On the 6th he was anæsthetised with ether, and an incision was made over the most prominent part of the swelling, at the outer margin of the rectus. The abdominal wall was infiltrated and stiffened, but no pus was met with until the peritoneal cavity was reached. An irregular cavity walled in by intestine was then opened, the ascending colon being firmly adherent to the anterior abdominal wall at the outer limit of the space. The pus was extremely offensive, faecal in odour, and dirty coloured, but no distinct faecal lumps were present. The cavity was abundantly lined with lymph, and no definite opening in the intestine could be discovered by the escape of either faeces or gas. A large drainage-tube was inserted, and the wound was partly sutured with silk-worm gut, after the cavity had been thoroughly flushed with hot sterilised water.

On the 7th he was found to have been very comfortable and to have slept well, there being no pain. The wound was dressed, the discharge from the tube being distinctly faecal.

For the next three days a small amount of fæces escaped daily, and the purulent discharge was abundant. After the 11th, however, there was no further appearance of fæces, and the pus, though still foul, became gradually sweeter and less abundant. He steadily improved in his general condition, the temperature remaining normal, and he rapidly regained flesh. The tube was gradually shortened, and finally removed on the 30th, little induration remaining around the wound. On October 7th the latter had entirely closed, and on the 9th he left the hospital well.

Ruptures of the colon are not of very frequent occurrence ; in fact, the accident is probably more common in the spontaneous variety seen in cases of malignant disease with obstruction than as a result of trauma. I have only personally observed one other instance of this injury, and in that the rupture of the descending colon was completely extra-peritoneal, leading to the formation of a large fæcal abscess in the left loin. The statistics of Curtis show, moreover, that the percentage occurrence of rupture of the large bowel compared with that of the small is very low, since in 113 cases of ruptured gut collected by him, only four implicated the colon.

The injury under consideration was manifestly of comparatively slight nature, though without the care exercised in its early treatment by Dr. Crossman it might readily have led to a fatal termination.

The main interest in the case seems to centre in the question as to whether the original injury to the colon was intra- or extra-peritoneal in position. When such accidents are not rapidly fatal the explanation is usually to be found in the fact that the rent in the colon has occurred in the extra-peritoneal segment, hence extravasation takes place into the retro-peritoneal tissue of the loin, and the general peritoneal cavity escapes. In these cases, however, the abscess usually forms in the loin, while in the above instance the abscess was intra-peritoneal, and also within the line of the ascending colon. Two modes of explanation seem to suggest themselves. First of all there seems to be little doubt that the original injury did not amount to an actual rent, or, if it did, that the rent was very small in extent.

Under these circumstances adhesive inflammation may at once have commenced, and when the serious trouble took place on August 26th there may have been some preparation for the limitation of the fæcal abscess. It seems, however, more likely that the injury in this case was in the posterior segment, the injury in the first instance being perhaps either a very slight rupture or severe contusion without an immediate rent, escape of the contents of the gut occurring only on the twenty-fifth day, when the patient tried to get about (August 26th). The simultaneous occurrence of hæmaturia seems to afford corroborative evidence of some value in localising the injury to the inner side of the bowel, *i. e.* that nearest to the right kidney; while the adhesion of the bowel to the anterior abdominal wall noted at the time of operation also seems to point to the bowel having been pressed forward. Hence the absence of a palpable swelling of the loin in the usual position would be explained by the fact that the original injury, affecting the colon and kidney, so damaged the peritoneum covering them both as to render the passage of escaping fæces and pus more easy in the direction of the abdominal cavity than into the loin; and this is perhaps the more likely when the chronicity of the sequence of events is taken into account, the retro-peritoneal tissue in the immediate neighbourhood of the injury having become more dense from inflammatory induration. The dark colour and lumpy nature of the fæcal discharge seemed to leave no doubt that the colon was the portion of bowel injured.

CASE 3. *Rupture of liver; intra-peritoneal hæmorrhage; double localised empyema; perisplenic abscess; internal strangulation of the intestine by a Meckel's diverticulum; death.*—T. D—, æt. 19, male, labourer. Has enjoyed fairly good health except for a winter cough. One brother died in the hospital with an empyema, and tubercular disease of the lungs.

On the evening of February 12th he was in a "boat swing," from which he fell across a rail which caught him across the abdomen. He was brought to the hospital about 8 p.m., and walked into the casualty room leaning on the arm of another man. He complained of much pain in the



abdomen, looked pale, his skin was cold, and his pulse was small and rapid.

On examination of the abdomen no sign of external injury was apparent, but he complained of tenderness on the left side, and the left half of the abdomen was rigid; shifting dulness was present in each flank, otherwise the abdomen was tympanitic.

At 1 a.m. the dulness in the left flank had increased considerably, and during the early morning it continued to do so; meanwhile the patient was very pale, moaning and restless, and the pulse was small and rapid. Temp.  $98^{\circ}$  F.

At 7.30 a.m. on February 13th he was anaesthetised, and a median incision was made above the umbilicus. On opening the peritoneum more than a pint of blood poured out, still fluid, and with no clots.

Examination of the under surface of the liver revealed nothing but an old cicatrix, possibly the result of an infarct, about an inch in length; the finger was passed deeply to the posterior surface, but no definite rupture was felt. Examination of the spleen was difficult, as the organ was firmly held down by its peritoneal attachments, and could not be brought forward. As, however, no positive evidence of rupture of the liver had been gained, and as also the signs had pointed rather to injury in the left half of the abdomen, a second incision was made in the left linea semilunaris. From this wound blood again poured freely, but no injury to the spleen could be detected, although it was got well into view. The patient had now been on the table three quarters of an hour, and as his condition was far from good, after rapidly examining the mesentery, the abdomen was douched with hot water (as warm as the hand could bear). This was continued until the water came away clear, and the wounds were then sutured and dressed with bichanide gauze.

The patient rapidly improved when he returned to bed, although he showed signs due to shock and loss of blood during the next two days. He was very weak and drowsy, the temperature on the 14th falling to  $97^{\circ}$ , while the pulse was beating 30 to the minute. The pulse steadily improved, the abdomen remaining soft and moving freely with respi-



ration. He suffered much with cough, and spat up blood-stained pellets of mucus and some clot.

On the 17th the dressings were changed; there was no blood in them, the wounds looked perfect, and there was no sign of any fluid in the peritoneal cavity.

On the 20th the wounds were again dressed, and the stitches removed. There was suppuration of the stitch holes of the lateral wound, and this was slightly opened up, and a cyanide plug introduced to allow of drainage. The general condition was now much improved; the bowels, which had been loose after a purgative given on the 15th, were acting regularly, and there were no abdominal symptoms. The stools were normal, and well-coloured, urine normal in quality and quantity. The temperature rose to over  $100^{\circ}$  on the night of the 20th.

After this date he complained of some pain in the left side, his respiration was quickened, and he continued to expectorate pellets of mucus in considerable quantity. The temperature rose, rarely falling below  $100^{\circ}$  in the morning, and ranging between  $100^{\circ}$  and  $101^{\circ}$  at night. At the same time he was losing flesh and looking ill.

March 2nd.—There is impairment of resonance at the left base posteriorly in the lower fourth. Breath-sounds, local resonance, and fremitus are also weak. The fever continues as before, and there is continuous slight suppuration of the lateral abdominal wound.

On March 4th an aspirating needle was introduced at the left base, and  $\frac{3}{4}$  j of thick, sweet pus removed. At the same time some impairment of resonance was noted at the right base also. It was determined to explore the chest by incision, and on March 6th he was anæsthetised. Prior to incising the left pleura it was considered wiser to insert an aspirating needle at the right base. This was done, and about  $\frac{3}{4}$  j of frothy, dirty brown, stinking pus was drawn off. As the pus on the left side had been quite sweet it was determined to leave that, and a portion of the seventh right rib was removed just external to the angle of the scapula, the wound crossing the aspiration puncture. When the pleura was opened, however, no pus was discovered, and the lung was bound by strong, old adhesions to the parietes and dia-

phragm. It was thought wise to separate these in part, especially from the diaphragm, and the latter was carefully palpated with the view of excluding a subdiaphragmatic abscess. Nothing was, however, found, and a needle was then passed some three inches into the lung, a little dark-coloured pus was let out; hence a tube was inserted to the same depth, but there is little doubt that the pus came from a large bronchus. The visceral and parietal pleurae were sutured together, and the portion of the lung surrounding the tube brought to the surface of the wound.

6th.—The patient rapidly recovered from the shock of the operation. This morning there is considerable discharge from the thoracic wound, but little or none from the tube in the lung. The lateral abdominal wound is also still suppurating rather freely. The temperature has fallen to normal, and the pulse is fair, beating about eighty to the minute. He complains of considerable epigastric pain.

On March 8th the temperature again began to rise, and the patient steadily lost ground without offering any special symptoms. The tube in the lung was removed as no discharge came by it.

On March 18th, as the general condition was becoming steadily worse, and the temperature was again rising above  $101^{\circ}$ , it was decided to explore the chest a second time. Under an anæsthetic the left side of the chest was punctured with an aspirating needle in three places without success, and the needle was also passed by the thoracic wound through the diaphragm on the right side without finding any pus. The wound on the left side of the abdomen was also explored, but proved only a small superficial suppurating cavity.

On March 19th he was in much pain in the epigastrium and right side of the abdomen, so that he groaned throughout the day, and was very drowsy and stupid. The pulse was 100, temperature normal. Face anxious, and he was extremely weak.

21st.—Has been steadily getting weaker, has groaned continuously with pain in the abdomen. The abdomen is tender, especially to the right of the umbilicus, and is becoming distended, especially over the stomach area. Peristaltic movements of the small intestine are apparent. He

has vomited several times; the vomit is distinctly faecal in odour; pulse 100, temp. 97°.

The condition continued to increase in gravity, and although it was evident that intestinal obstruction was the main element, it was thought that considering the doubt as to the nature of the obstruction, and the patient's extreme weakness, it was hopeless to interfere, and on March 24th he died.

*Post-mortem examination* (Dr. Turney).—The body is somewhat emaciated.

*Abdomen.*—The stomach and upper part of the small intestine are enormously distended. In the neighbourhood of the umbilicus the dilated bowel terminates suddenly in a series of loops which are tightly nipped at their base. Below this point the intestine is completely collapsed. The strangulated loops are purplish in colour, their wall is thickened, and evidently their nutrition has suffered severely, though probably not beyond repair. The band by which they are constricted at first sight seems to come from the great omentum, a prolongation of which is adherent to it, but the actual attachment is to the lower part of the small intestine, and its other end terminates in the mesentery, to which it is closely adherent. There are no signs of general peritonitis, though there is a good deal of injection. There are still traces, where the coils have been in contact, of the blood effused at the time of the accident. The left lobe of the liver is connected by dense adhesions with the diaphragm above and the stomach below. On breaking these down a small abscess cavity capable of accommodating perhaps one ounce of pus is opened; it is situated in relation to the posterior and upper borders of the spleen, the parietal part of the diaphragm, and the under surface of the left lobe of the liver. There is no disease of liver, spleen, or stomach to account for the presence of this abscess.

The liver is normal in size and appearance, except at the posterior aspect of the right lobe. On section in this region several islands of a yellow colour stand sharply marked out from the remaining liver substance. The largest is of the size of an almond, and around this are numerous small islets. There is no surrounding induration, and the colour resembles

that of cheesy matter tinged with bile. Around them are signs of several healed fissures in the liver substance, and in the immediate neighbourhood is a fair-sized cavity resembling a dilated bile-duct with smooth yellowish walls containing a fibrous material, no doubt decolourised blood-clot.

*Chest.*—Heart and pericardium healthy. The cavity of the right pleura is obliterated in its lower part by firm adhesions between the lung, chest wall, and diaphragm; except for these and the wound due to the excision of rib there is nothing abnormal, the lung is healthy, and there is little or no trace of the track made for the drainage-tube. On the left side dense adhesions also exist between the base of the lung and the chest wall. On separating the lung from the diaphragm an abscess cavity is opened. This is altogether outside the lung, there is no perforation of the diaphragm, and it does not correspond with the abscess around the spleen. There is no connection between them,—in fact, not only the diaphragm, but the healthy left lobe of the liver is interposed between them. The left lung is healthy.

Microscopic examination of the cheesy patches in the liver shows them to consist of necrotic liver tissue and the remains of old blood-clot.

The peri-splenic abscess is evidently of old standing, the local empyema probably more recent, but there is no evidence of the latter being secondary to the former.

Examination of the hand constricting the intestine showed it to be a Meckel's diverticulum. If the original abdominal incision had been made below the umbilicus, it would therefore have probably been discovered.

The above case presented initial diagnostic difficulty, the apparent early collection of blood in the left flank suggesting rupture of the spleen rather than the liver, while in addition the tenderness and rigidity of the abdomen were more marked on the left side.

Abdominal exploration, decided upon in consequence of the rapidly increasing amount of fluid in the peritoneum with grave signs of excessive internal hæmorrhage, did not give the definite information that was expected. Injury to the spleen was certainly excluded, but although some doubt



remained as to the liver as the source of the hæmorrhage, this origin could not be definitely decided upon. The latter difficulty of course depended on the fact that the injury was almost entirely extra-peritoneal, the fissures not extending to the under surface, and the blood entering the general peritoneal cavity by a small rent in the hepato-renal fold. With regard to the hæmorrhage, it is worthy of note that the blood was entirely fluid, and this may perhaps be a point of importance in excluding the spleen as the viscus ruptured, since in the cases of splenectomy for rupture published by Messrs. Pitts and Ballance ('*Clin. Soc. Trans.*,' vol. xxix, p. 77, 1896) clotting of the blood was a very prominent feature, and it is readily conceivable that this may be due to a peculiarity in the splenic blood from its richness in white cells.

Continuous difficulty in diagnosis accompanied the progress of the case. One of the most prominent symptoms was troublesome cough, and this was accompanied by profuse expectoration of muco-pus, for some days strongly stained with blood, some of which was in small clots. These signs led me to believe that severe contusion of the lung had occurred, but the post-mortem examination lent little support to this opinion. Again, the development of the localised empyemata with a history of a cough for some months before the accident, and the fact that his brother had died in the hospital from pulmonary tuberculosis, suggested that the fever and emaciation were possibly due to rapid phthisis; but this again was proved to be quite erroneous by the post-mortem examination, as no sign whatever of pulmonary tubercle was discovered.

The information gained by the thoracic explorations during life were equally puzzling; the pus drawn by the aspirator from the left pleura was sweet, while that obtained on the right side was fœtid, and much gas escaped with it. At the time I thought the pus on the right side must have been drawn from the retro-peritoneal tissue through the diaphragm, but palpation did not support this theory. The subsequent puncture was negative, and at the post-mortem examination it was evident that no suppuration had occurred in connection with the hepatic injury. Again, prior to the

thoracic explorations it seemed as if the fever might be explained by the suppuration in the lateral wound in the abdominal wall, but when this was laid open it proved to be merely a small subcutaneous cavity extending from the stitch openings.

The perisplenic abscess was not suspected during life, and the formation of this was in some respects anomalous. I think there can be little doubt that it must be ascribed to the primary exploration, but in this case it was remarkably chronic in its course, gave rise to no symptoms, and remained very limited in extent. It appeared at the post-mortem to be quite distinct, moreover, from both the suppurating abdominal wound and the basal empyema. Again, supposing it to be due to infection at the time of the exploration it is remarkable that the uninjured spleen should have suffered, while the ruptured liver escaped with an equal amount of free handling. A ready explanation of the multiple abscesses might be found in attributing them to pyæmic infarcts; it can, however, only be said in this relation that there was at no time any suspicion of a rigor, that the contents of the abscesses differed in character, one being foetid and the others sweet, and that all three were distributed in nearly the same region of the body. I do not think myself that there is any ground for regarding them as pyæmic, and this view is supported by Dr. Turney, who made the post-mortem examination.

Lastly, I must advert to the most important factor in the case, the actual cause of death. In reviewing the case it seems difficult to appreciate how the patient could have been allowed to die unrelieved, and I can offer only the following reasons for not having undertaken a second abdominal exploration. In the first place the general condition of the patient was far from promising, he had been steadily getting worse, and after the third operation was in an extremely feeble state. Secondly, I did not attach proper importance to the localised pain in the abdomen following the operation, and this for the reason that a similar attack of pain followed the second operation, and after two or three days passed off. In both operations the patient had to be placed in nearly the prone position, and this I believe led to the slipping of

the intestine behind the Meckel's diverticulum. It is possible that the pain on both occasions was due to the same cause, but that on the first strangulation did not occur. On the first occasion, however, the obstruction, if any, gave rise to no obvious signs; on the second occasion these were well marked, but in my opinion at the time the distension was mainly of the stomach, and I wrongly attributed it to pressure, probably on the duodenum from a retro-peritoneal abscess, the existence of which I thought the most likely cause of all the trouble. Having formed this opinion I considered the patient's condition too bad to give a further exploration any chance of success, and this feeling was no doubt strengthened by the series of unsuccessful explorations already made.

The case, although a very disappointing one to the surgeon, is, however, of interest; it is a good instance of the success which may follow the exposure and treatment by hot flushing of even a considerable rupture of the liver, since the post-mortem examination showed conclusively that as far as the original local lesion was concerned the patient was on the high road to recovery, no further hæmorrhage having followed the first operation, although rapidly increasing before, and the liver itself being in an almost completely healed condition. Again, it is of interest as having presented throughout difficulties of diagnosis which eventually led to the disappointing result chronicled; but, on the other hand, it is clear that a second abdominal exploration should have been made, and this might have converted it into a success. The main difficulty no doubt depended on the thoracic complications, and these even the post-mortem examination appears to throw little light upon.





A CASE  
OF  
HYPERPLASTIC OSTEO-ARTHRITIS,  
OR  
PULMONARY HYPERTROPHIC OSTEO-ARTHIROPATHY  
OF MARIE.

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By F. R. WALTERS, M.D., M.R.C.P.

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J. M—, an umbrella maker æt. 34, was admitted as an out-patient at the North London Hospital for Consumption on April 1st, 1895, complaining of cough with copious expectoration, pain in the back, and general weakness.

His *family history* reveals nothing remarkable. His father was living, over age seventy; his mother died of influenza the year before admission, about the same age; four brothers living and healthy, the eldest over forty; several of these are or were acrobats, and one stands quite six feet high. There are four sisters, all living and healthy. None of his relatives are remarkable for the size of their hands or feet, or are the subjects of any deformity. There is no history of tuberculosis, gout, rheumatism, or any kind of tumour. Patient is the third of his family, and has a wife and five children (youngest aged four), all in good health.

*Previous history.*—Born at Coventry in 1861, he lived in

London from 1868 to the present time, excepting from 1874 to 1885, when he was in Dublin, and during occasional absences while on tour. From twelve to eighteen years of age he worked on and off as an acrobat, being at the same time engaged in other occupations, chiefly umbrella making. He has no recollection of any serious falls. When fifteen years old he lost the tip of the right index finger in a printing machine; and nine years later he ran a needle into the middle joint of his left middle finger. Matter formed and discharged, and after about two months the joint healed up, but remained stiff and over-extended. No bone was known to come away. He always had large hands, and was muscular. Many years ago he had a "touch of rheumatism" affecting the joints of arms and legs, but was not laid up with it. He never had rheumatic fever, gout, or any definite illness since childhood, and was strong and healthy until the beginning of 1894. He married young (aged seventeen); he appears to have always been temperate, and denies syphilis, but had a slight attack of gonorrhœa at Dublin.

*Present illness.*—About February, 1894, he caught cold and had pains in the right side of his chest. The pains went away, but some cough remained with general weakness and pain in the back, which gradually increased until he had to give up work at the end of October, 1894. Up to this time he could use small tools without difficulty. He attended a few times in May, 1894, as out-patient at Westminster Hospital. The physician who examined him expressed a fear that he was consumptive, but no notice was apparently taken of his hands. These, he states, swelled up rapidly some six or eight weeks before Christmas, and assumed their present condition. He cannot say when his feet began to swell, and has worn the same sized boots all along. He occasionally had slight pains in hands and feet, but no headache of any consequence, and no affection of sight. He has been losing flesh "for a long time." His cough has been troublesome, keeping him awake at night, and sometimes causing vomiting; expectoration copious, mostly yellow phlegm, never noticed to be offensive. A few streaks of blood appeared in it three weeks before Christmas. He has had occasional night sweats, but "no fever." Breath short on exertion, occasional

flatulence, appetite remained good and bowels regular, but since he was out of work his wife has had to keep him and the family.

*On admission.*—An ill-nourished, somewhat anæmic, expressionless man, with large hands and feet, contracted chest, and high dorsal angular curvature. Height 5 feet 5 inches. Weight 8 stone 6½ pounds. Facies not remarkable in any way. Nose a little large, but not abnormally so, and its septum unsymmetrical but not thickened. No unusual development of eyelids, lips, ears, cheeks, or tongue. Malar bones and frontal sinuses not specially prominent. No prognathism or enlargement of lower jaw, alveolar processes, or other parts of the cranium, which has the average amount of symmetry. Teeth moderately good, and meet normally. Veins of face not dilated. Scalp covered with a good growth of brown hair; that on the face normally developed. No tendency to acne or special development of sebaceous follicles. Neck small, without special prominence of larynx. Thyroid body small, but can be felt.

#### Measurements of head and neck :

Cranium—		Cranium—	
Antero-posterior diameter	187 mm.	Bi-mastoid diameter	. 123 mm.
Mento-occipital	208 "	Bi-auricular	.. 133 "
Mento-bregmatic	227 "	Bi-malar	.. 108 "
Mento-vertical	250 "	Bi-temporal	.. 113 "
Occipito-bregmatic	150 "	Bi-zygomatic	.. 133 "
Bi-parietal	150 "	Bi-angular	.. 105 "
Occipito-frontal circumference	.		. 550 "
Occipito-glabellar	..		. 510 "
Length of lower jaw from articulations over chin	.		. 270 "
Neck diameters 83 x 105 mm.	Circumference	.	. 330 "

*Chest* emaciated, somewhat cylindrical, but flattened anteriorly. Ribs permanently raised, the third pair thickened anteriorly, and the fifth pair both anteriorly and laterally, chiefly the latter. Free perspiration from axillæ, although the room was not specially warm. Left mamma slightly enlarged, not painful nor tender. No eruption or dilated veins over chest. Sternum flat anteriorly, and not abnormally wide. Slight flattening in both infra-clavicular and supra-mammary regions, chiefly due to wasting of pectorals. Chest movements restricted; at nipple level during inspiration 775,

expiration 769. Respirations 20—24, chiefly abdominal. *Posteriorly* a small kyphotic prominence about the fourth dorsal spine, projecting about 25 mm., the spinal column being almost flat above and below this point. Slight scoliosis is also present, the concavity being to the right, and the right shoulder slightly drooping. The prominent spine is not red, and not very tender, nor very much thickened, and no pain is caused by tapping head or pressing on shoulders, and the neck and loins can be freely moved without pain.

*Right side.*—There is slight dulness, bronchial breathing, and increased vocal resonance, with whispering pectoriloquy above and below the clavicle. The rest of the right front down to the fifth rib is hyper-resonant, with harsh breathing. Laterally, the middle zone is the same, while the lower half is dull on light percussion, hyper-resonant on deep percussion, breath-sounds there being feeble, and vocal resonance and fremitus little altered, while the heart-sounds are readily heard. *Posteriorly*, slight dulness over supra-spinous region, with bronchial breathing and increased vocal resonance externally; dulness at base for about an inch in scapular line, with diminished breath and vocal sounds and fremitus; also dulness round the kyphotic prominence, the rest being hyper-resonant. A few rhonchi and large moist râles are occasionally heard just above the liver. The area of dulness has a curved upper border as in pleuritic effusion.

*Left side.*—Left apex not very resonant, but not dull; breath-sounds feeble, vocal resonance and fremitus unaltered. Below this to cardiac area boxy resonance and feeble breath-sounds. Laterally the extreme axilla is not very resonant; slight loss of resonance on light percussion towards anterior axillary fold from third to sixth ribs, hyper-resonant nearly all over on deep percussion. Breath-sounds rather feeble, vocal resonance and fremitus unaltered; heart-sounds well heard over dull axillary patch. *Posteriorly* dulness round the kyphotic prominence, the rest being hyper-resonant with harsh breath-sounds. Occasional moist sounds towards base. Slight tenderness on percussion over lower scapular muscles on both sides. The sternum presents no abnormal dulness.

*Heart impulse* visible in fourth and fifth spaces inside left nipple line, feeble when felt. No epigastric pulsation. Area



of deep dulness extends to mid-sternum and upper border of third rib. Sounds somewhat feeble, first reduplicated at apex; no murmurs.

*Pulse* 114, full, regular, compressible. No atheroma detected.

*Digestive organs.*—Tongue coated, not enlarged. Mouth cavity normal excepting slight elongation of uvula. Abdomen somewhat prominent, comparatively hairless between umbilicus and pubes. No ascites. Splenic dulness slightly increased; spleen not felt below ribs. Hepatic dulness extends up to sixth rib in right nipple line; liver not felt below ribs.

*Larynx* normal. No aphonia or hoarseness.

*Upper extremity.*—Outer third of clavicle abnormally wide (34 mm.). Acromion process also enlarged. A bony prominence is seen near the root of each spine of scapula, larger on the right side. Shoulder-joints not freely moveable, and cannot be completely extended by patient. A little pain on active movement, but no tenderness; creaking occasionally felt on passive movement. No evidence of capsular thickening or effusion into joints, nor of any enlargement of upper ends of humeri. Upper arm wasted; muscles small and flabby. Shafts of humeri not enlarged. Elbow-joints look big. Probably bony thickening of lower ends of humeri and upper ends of ulnæ. Capsules feel thick, and may contain a little fluid. Movements restricted but not painful. Joints cannot be completely extended, flexion free. Forearms large, with marked thickening in lower fourth, chiefly noticeable on dorsal aspect. The enlargement is mainly or entirely bony, increasing diameters in both directions, but especially antero-posteriorly; it begins somewhat suddenly 8 cm. above wrist-joint, and reaches maximum about 2 cm. above the joint. The bone surface is smooth, not specially tender or painful, and the bony landmarks are not obliterated.

The position of the wrist-joint is shown by the usual constriction. There is possibly some capsular thickening, and perhaps a little effusion. Carpal bones appear slightly thickened. There is no alteration in the mobility of the joint, and no crepitus.

The hands are decidedly enlarged. Palms thick and flat, with ill-marked thenars and hypothenars, but the normal

hollow is not lost. Metacarpals not elongated; the head of each is enlarged, the rest of the bone feeling natural. Fingers large, bony, and spindle-shaped; the largest parts being at the middle joint, excepting in the thumbs, in which the terminal phalanges are the largest. The last phalanx of the right index finger missing. Middle joint of left medius over-extended, very large and stiff. Shafts of phalanges all decidedly thickened, especially antero-posteriorly, rendering them cylindrical. Terminal phalanges swollen at their ends, and somewhat blue and clammy; somewhat over-extended, especially as regards right ring and little finger, and left index and ring finger. The fingers as a whole appear to be too long in proportion to the hand. Nails large, thin, and strongly curved in both directions, especially in length. They occupy three fourths of the dorsum of the terminal phalanges, reaching nearly to the lateral borders of the fingers, and curving over the ends. Roots mobile and deep-set, slightly raised above the level of the middle phalanx. The body of the nail slightly pitted here and there, strongly striated lengthwise, and in a few instances also transversely, but not split. They are said by patient to grow more quickly than formerly. The nail changes are best marked in thumbs and middle fingers. Volume of hands slightly variable; the left is a little larger than the right. Movements of hands are clumsy and restricted, both active and passive. Patient finds a difficulty in buttoning his coat, and cannot clench his hands properly. The skin of the upper extremities is nowhere thickened, red, nor adherent. It is loose over upper arms, tight over forearms, especially tight and thin over phalanges. Perspiration is unusually free over dorsum of hands and fingers since beginning of illness. There is no œdema or undoubted thickening of soft parts of upper limbs beyond what has been mentioned. There may be some subcutaneous thickening over enlarged parts of hand and forearm, but the play of tendons is clearly visible over wrists and dorsum of hands, and there is no crepitus in their sheaths. The skin creases are visible but ill-marked over the enlarged parts. For measurements see Table I.

*Lower extremities.*—Some thickening of iliac crests. Hip-joints apparently unaffected. Thighs thin, with ill-developed

muscles. Knees large from bony overgrowth; patellæ very wide, and lower ends of femurs and upper ends of tibiae wide and thick. Slight synovial thickening, but no noticeable effusion. No lipping or osteophytes to be felt. Slight painless crackling on passive motion. Active movements a little awkward and restricted. Veins over thigh, knee, and leg moderately enlarged and varicose; markedly pouched about ankles. Calf muscles ill developed. The lower half of left leg and lower third of right leg enlarged, the enlargement being more gradual than in the forearms, chiefly bony, but also involving soft parts, which are slightly cedematous, and partly hide the shape of the leg about the ankle, forming pads around the outer and inner malleoli. The bony swelling is most marked in the lower 7 or 8 cm. of the tibia and fibula, which are slightly tender. Ankle-joints are swollen, partly from synovial thickening, partly from effusion. The feet are swollen and somewhat shapeless; the big toes large at their ends, with strongly curved nails, the other toes being similarly affected but to a lesser degree. Movements are slightly restricted in ankles and feet. There is no pain or creaking on manipulation. The skin of lower limbs shows no abnormality beyond a very little sclerodermia over outer borders of feet, and is nowhere red nor adherent. For measurements see Table II.

*Nervous system.*—Gait awkward. No paralysis, ataxy, or tremors. Patellar reflexes lively on both sides. No ankle-clonus. Plantar reflexes lively. Intelligence good, but memory a little impaired. No headache. Sleeps well. Hearing good. No tinnitus. Sight not very good lately. No anæsthesia or numbness.

*Genito-urinary system.*—No abnormality or enlargement of external genitals. Has had no venereal desire for eighteen months. Urine clear, 1020, with slight excess of urates; no sugar or albumen.

*Temperature* normal. Patient is very sensitive to cold, and on slight exposure his hands become clammy, and a trifle blue at the finger tips.

*Progress of the case.*—He was put on cod-liver oil and an acid tonic mixture, and later on creasote  $\text{miv}$  in mixture three times a day. On May 27th effusion was noted in the

right knee. Three days later he was shown by Mr. Bowlby at St. Bartholomew's Hospital; there was then fluid in both knees. On June 10th casts were taken—for the St. Bartholomew's Hospital Museum—of his hands and spinal projection. Slight streaks of blood appeared in the sputum on this day only. June 17th, urine 1023, acid, slightly cloudy when first passed, clearing up on heating. No albumen. Doubtful sugar reaction with picric acid test. June 24th, examined for discriminating power of upper extremity. Results.—Pad of middle finger, 7 mm.; palm, 9 mm. (somewhat variable); dorsum of hands, 15 mm.; back of wrist, 30 mm.; back of forearm, 45 mm. (left side, 30—40 mm.); front of forearm, 40 mm. June 28th, sight examined by Dr. Lawford.

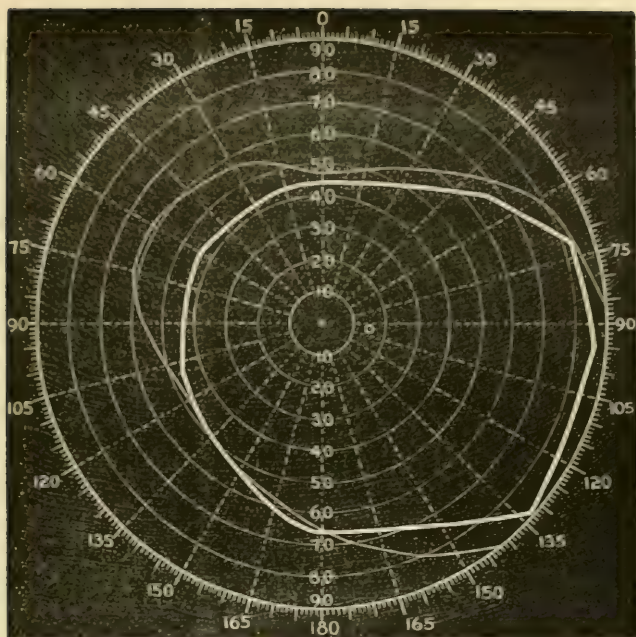
R.  $\frac{6}{9}$  partly + 1 D.  $\frac{6}{6}$  fairly. Reads 1 J. with difficulty.  
 L.  $\frac{6}{9}$  partly + 1 D.  $\frac{6}{6}$  fairly. + 1.5 D. reads 1 J. easily.

On ophthalmoscopic examination media clear. O. D.s healthy in colour. Retinae and choroids show no pathological condition, except perhaps slight turgescence of retinal veins. Pupillary reaction to light, and in convergence normal. Movements of eyeballs and eyelids seem normal. Visual fields about normal, as taken with Hardy's perimeter with 10 mm. white square in good daylight (see diagrams).

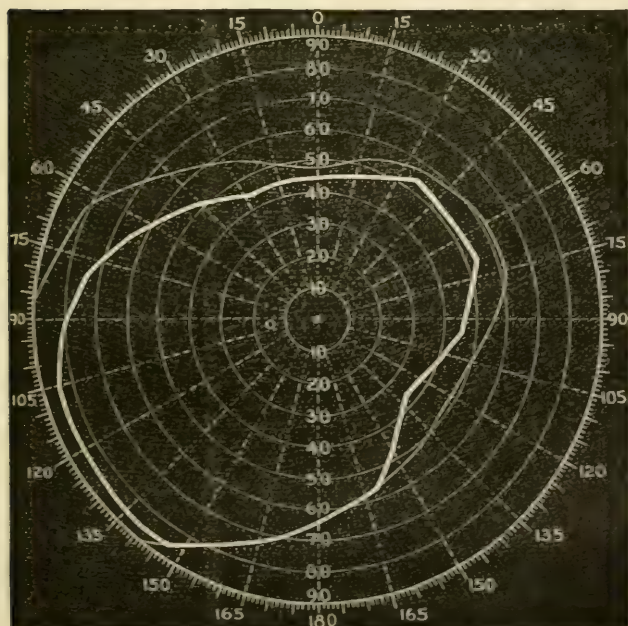
July 8th.—Suspected effusion into right pleura, as the temperature was 99.8°, and the vocal resonance, fremitus, and breath-sounds over dull area at right base seemed less than before. Three days later admitted as an in-patient in one of Dr. Squire's beds.

*On admission* temperature was normal. The dull area on right side reached fourth space in right nipple line, fifth space in mid-axillary line, and eighth rib in scapular line. Moist crepitations were heard just above hepatic area. Friction sounds near sternum below right mammary region. Liver not felt below ribs. On the left side sharp crepitations were heard over the dull patch near anterior axillary border and moist sounds at base posteriorly. In all other respects the physical signs remained as before. The patient had gained flesh during attendance as out-patient, and was generally in better health. Cough was less troublesome, but he still complained of pain and weakness in the back. Iodine paint was applied to right side and both bases, but in all other respects





Right.



Left.

the treatment was unaltered. On July 22nd the chest was as before, but vocal fremitus was clearly felt as low as eighth rib in right mid-axillary line, dull area remaining as before. Still decided effusion in knee-joints, which were directed to be painted with iodine.

Circumference above knee . right 350 mm. left 352 mm.

„ over knee . „ 380 „ „ 380 „

„ below knee . „ 320 „ „ 322 „

August 2nd.—Shown at the annual meeting of the British Medical Association. At this time the hands were less swollen and more serviceable. Measurements of various parts of the body showed uniformly greater figures, owing to the better state of his nutrition. He remained an in-patient until the end of October. During his stay in the hospital further notes were taken, for some of which I am indebted to the resident medical officer, Dr. Coles, whom I wish to thank for his courtesy in supplying me with notes and photographs, and for his careful attention to the case. The blood was examined on two occasions with v. Fleischl's hæmometer. It was abnormally fluid, and contained the first time 20 per cent., the second time 45 per cent. Hb. The urine was found to be usually below the average in quantity, with a corresponding deficiency in urea. Thus on one occasion it was 1026, 29 ounces passed in twenty-four hours; very acid in reaction, with copious deposit of amorphous urates and crystals of calcium oxalate, a faint trace of albumen; no sugar, and no renal casts or pus. Urea 355½ grains in twenty-four hours. The temperature sense was tested by Dr. Coles, and found to be normal. The sputum was several times examined for tubercle bacilli both in the in-patient and out-patient department, but with uniformly negative results. The chest signs remained substantially the same, except that the crepitations disappeared from the dull patch in left axilla, râles and rhonchi nearly disappeared from all parts of the chest, vocal resonance and fremitus increased over right side, and expectoration greatly diminished. The temperature on a few occasions rose to 100°—101°, but was usually normal. His skin became clearer, and he gained in weight. The effusion gradually disappeared from the knees, elbows, and wrists. Chest measurements taken on August 12th were as follows;

at nipple level, with inspiration 811, expiration 780; under arms 853; at lower end of sternum 785. He continued as an out-patient, and towards the end of 1895 there was noticeable diminution in the bony prominences above the wrist. On March 13th he was suddenly seized with profuse hæmoptysis, which lasted several days, so that he was by my advice admitted into St. Thomas's Hospital under Dr. Acland.

It is unnecessary to say much about the case, which is obviously one of typical osteo-arthropathy. As regards the chest there was evidently an old cavity at the right apex, and a more recent secondary patch of consolidation on the left side. An old pleurisy (perhaps dating back to February, 1894) had left a thickened pleura and displaced heart. Whether there was fresh effusion in July, 1895, I am unable to say positively, although it then seemed likely. The kyphosis, which is high in the back, contrary to the rule in osteo-arthropathy according to Marie, has all the characters of quiescent Pott's disease; and this and the lung trouble were probably both tubercular in origin.

I have to thank Mr. Stanley Kent and Dr. Barry Blacker for some excellent skiagrams of the case, some of which are here reproduced, together with one of a normal hand for comparison. I am also indebted to Dr. Blacker for a general report on the skiagraphic appearances, which is inserted below. It is unfortunate that no skiagrams were taken of the bone changes in their early stages.

#### DR. BLACKER'S REPORT.

*Terminal phalanges*: expanded portions for the support of the finger pulps enlarged and pointed upwards; shafts of the bones thickened, small spurs at the insertion of the extensor communis and flexor profundus digitorum. *Middle phalanges*: increase of compact bone at the sides of the shafts. *Proximal phalanges*: same accentuation of compact bone, almost obliterating the lateral concavities, and in the middle finger causing them to appear convex. The increased formation of bone seems to cease at the articular cartilages, causing the heads to appear contracted. *Metacarpal bones*: same condition, but not so marked as in the proximal phalanges. The middle finger is again the most









TABLE I (continued).

	Dorsal, length.	Base, width.	Middle, thickness.	Head, width.	Head, thickness.	Length from radius.
<i>Metacarpals</i> , thumb .	48 ...	18 ...	— ...	23 ...	28 ...	70
index .	58 ...	— ...	28 ...	— ...	24 ...	85
medius .	66 ...	— ...	34 ...	— ...	28 ...	100
annular .	60 ...	— ...	31 ...	— ...	25 ...	92
minimum .	60 ...	— ...	32 ...	— ...	24 ...	82

*Fingers.*

	Whole finger.	Proximal phalanx.						Middle phalanx.						Distal phalanx.					
June, 1895.	Dorsal.	Middle.			Joint.			Middle.			Joint.			Middle.					
	Length.	Length.	Width.	Thickness.	Circumfer.	Width.	Thickness.	Circumfer.	Length.	Width.	Thickness.	Circumfer.	Width.	Thickness.	Circumfer.				
Thumb .	72	40	18	17	75	—	—	—	—	—	—	—	20	18	84	32	22	18	75
Index .	—	50	22	20	80	—	80	—	—	68	—	62	—	—	—	—	—	—	65
Medius .	109	55	22	21	79	—	81	35	—	77	—	67	30	—	—	—	—	—	65
Ring .	—	48	—	75	—	—	83	—	—	70	—	67	28	—	—	—	—	—	65
Little .	—	46	—	68	—	—	70	—	—	65	—	58	22	—	—	—	—	—	57
March, 1896.																			
Thumb .	—	—	20	19	78	—	—	—	—	—	—	21	20	78	—	20	19	80	—
Index .	—	—	20	20	80	21	18	82	—	20	18	78	18	15	70	—	19	18	68
Medius .	—	—	21	21	80	23	21	85	—	21	19	78	20	16	69	—	19	16	66
Annular	—	—	19	18	72	21	19	81	—	20	17	75	18	15	66	—	18	15	65
Little .	—	—	18	17	70	19	16	70	—	18½	15	65	16	15	60	—	15	13	58

*Nails.*

		June, 1895.			March, 1896.					
		Width.	Length.		Width.	Length.		Lunula.		
Thumb,	R.	30	...	20	...	29	...	18	...	3
	L.	—	...	—	...	30	...	20	...	4
Index,	R.	—	...	—	...	—	...	—	...	—
	L.	30	...	22	...	20	...	20	...	—
Medius,	R.	—	...	—	...	25	...	18	...	—
	L.	—	...	—	...	26	...	22	...	—
Annular,	R.	—	...	—	...	25	...	20	...	—
	L.	—	...	—	...	25	...	29	...	—
Minim.	R.	—	...	—	...	20	...	16	...	—
	L.	—	...	—	...	21	...	20	...	—

Volume of hand to 25 mm. above dorsal line of wrist 16½ oz. (July 29th).

TABLE II.—Measurements of Lower Limbs.

	June, 1895.		March, 1896.	
	R.	L.	R.	L.
Length from articular surface of tibia internally to tip of inner malleolus "as a chord"	— ...	323 ...	— ...	—
of foot . . . . .	— ...	238 ...	— ...	—
Diameters: transverse above knee . . . . .	75 ...	65 ...	84 ...	84
condyles . . . . .	99 ...	96 ...	100 ...	90
head of tibia . . . . .	90 ...	90 ...	98 ...	100
tibia, ant. surf. at junct. upper with middle fourth	52 ...	57 ...	— ...	—
tibia, ant. surf. middle of shaft . . . . .	44 ...	45 ...	— ...	—
tibia above malleoli . . . . .	43 ...	47 ...	— ...	—
tibia and fibula, 75 mm. above ankle-joint . . . . .	65 ...	65 ...	65 ...	65
tibia and fibula, between malleoli . . . . .	76 ...	76 ...	82 ...	82
patella, horizontal . . . . .	60 ..	60 ...	65 ...	65
vertical . . . . .	60 ..	58 ...	— ...	—
thickness of sole opposite middle of arch . . . . .	58 ...	— ...	— ...	—
thickness of sole opposite root of big toe . . . . .	28 ...	— ...	— ...	—
transverse of foot opposite bases of metatarsals . . . . .	82 ...	— ...	— ...	—
transverse of foot opposite heads of metatarsals . . . . .	92 ...	— ...	— ...	—
Circumferences: thigh above knee . . . . .	318 ..	323 ...	363 ...	356
over knee . . . . .	360 ..	352 ...	377 ...	360
leg below knee . . . . .	300 ..	304 ...	340 ...	330
middle . . . . .	256 ...	— ...	— ...	—
75 mm. above internal malleolus . . . . .	— ...	212 ...	— ...	—
50 mm. above internal malleolus . . . . .	230 ...	235 ...	230 ...	240
over malleoli . . . . .	291 ...	295 ...	275 ...	275
foot, mid-dorsum . . . . .	235 ...	— ...	— ...	—
root of toes . . . . .	250 ..	— ...	— ...	—







DESCRIPTION OF PLATE I,

Illustrating Dr. F. R. Walters' Case of Hyperplastic  
Osteo-arthritis.

Dorsal view of J. M—'s forearms and hands.

This photograph was taken in October, 1895.









DESCRIPTION OF PLATE II,

Illustrating Dr. F. R. Walters' Case of Hyperplastic  
Osteo-arthritis.

FIGS. 1 and 2.—Side views of J. M—'s left hand.

These photographs were taken in October, 1895.



Fig. 2.



Fig. 1.







DESCRIPTION OF PLATE III,

Illustrating Dr. F. R. Walters' Case of Hyperplastic  
Osteo-arthritis.

Skiagram of normal hand (by Dr. Blacker) for comparison with Plate IV.





A. Barry Blacker, M.D., Photo.





DESCRIPTION OF PLATE IV,

Illustrating Dr. F. R. Walters' Case of Hyperplastic  
Osteo-arthritis.

Skiagram of J. M—'s right hand (taken by Mr. Stanley Kent in April, 1896).

See Dr. Blacker's report.





*E. Stanley Kent, Photo.*





DESCRIPTION OF PLATE V,

Illustrating Dr. F. R. Walters' Case of Hyperplastic  
Osteo-arthritis.

Skiagram of part of J. M—'s right foot (taken by Dr. Blacker in November,  
1896).

See Dr. Blacker's report.







TREATMENT  
OF  
FRACTURE OF THE PATELLA  
(BOTH EARLY AND LATE)  
BY OPERATION.

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By H. H. CLUTTON.

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As there must still be a good deal of difference of opinion as to the best treatment for a recent fracture of the patella, I have thought it would not be uninteresting to set down more in detail than is possible in the statistics of the Hospital Reports the experience of one method of treatment consistently carried out by one surgeon over a certain period of time from every case in which an operation was feasible.

As a matter of fact, this included every case admitted under my care except one—a woman—who was too feeble, from visceral disease, for any operative treatment. The period of time covered by this paper is from April, 1894, to the present date, July, 1896. During this time nineteen cases of fracture of patella were treated by exposure of the fractured surfaces and the application of one or more silver-wire sutures in the manner first proposed by Sir Joseph Lister.

I first took charge of beds in the hospital in February, 1891, and from that date to April, 1894, I treated most of these accidents by plaster-of-Paris splints. I also tried, amongst other plans, the method first introduced by Mr. Mayo Robson, of passing steel pins across the limb above and below the fragments; but found that, although close approximation could be obtained, fibrous union only could be for certain

secured. I witnessed also the subcutaneous method so ably advocated by Mr. Arthur Barker, but came to the conclusion that the open method was more satisfactory if it were not more risky, as there could be no certainty in the former method that the præpatellar fascia was not folded in between the fragments. When the open method of operation is superseding the subcutaneous on account of the greater security against sepsis in our modern work, it seems strange that in this instance we should adopt the subcutaneous method, which must have its drawbacks in not actually seeing the condition of the parts during the operation. The length of time the operation takes is to my mind unimportant, as the open method in a recent case does not take longer than fifteen to twenty minutes.

It is interesting to note that Mr. Barker considers the earliest possible moment after the accident as the most suitable time for the application of the subcutaneous wire; whereas I have generally thought it an advantage in the open method to wait till the effused fluid and blood have been absorbed. Both plans have the same object in view—the absence of blood from the field of operation.

But in the subcutaneous method the early operation also ensures the absence of adhesion between the torn fascia and the fractured surface of the bone, which is a very noticeable feature two or three weeks after the accident. This is a condition which is easily set right in the open operation, and almost impossible in the subcutaneous method. The early operation also arrests any further oozing from the fractured patella, which, judging from the amount of swelling, reaches its highest point a day or two after the accident. I therefore quite agree that, if the subcutaneous method be determined on, it should be done within a few hours of the injury. But the question as to which is the best treatment for recent fractures should be decided by the results some months or years afterwards.

I remember one instance in which the permanent subcutaneous wire within the joint led to ankylosis between the patella and the femur. This may, of course, have been due to prolonged rest on a splint. But at any rate it shows that the risk of this fixation is not imaginary. In this particular

case it led to a refracture of the patella, when the upper fragment was found firmly glued to the femur. But although in recent fractures this early subcutaneous wiring is immediately successful, and in many cases no doubt permanently so, it cannot be said to be a desirable method for the treatment of a fractured patella some weeks or months after the injury. In fact, Mr. Barker draws special attention to this in the 'British Medical Journal,' 1896, vol. i, p. 963.

I have therefore arranged the cases in two tables.

In the *first* of these two tables are placed the cases in which the fracture was quite recent and uncomplicated by a former injury. Here the subcutaneous method might have been employed, but for reasons already given I preferred to wire the fragments through an open wound. With regard to the details of operation, I have, as already stated, found it an advantage to wait till the swelling from the injury has to a great extent disappeared. Not only does this narrow the field of operation and so lessen the chance of infection, but the fragments will be found much closer together and require less traction for their approximation. The operation can then be accomplished with very little disturbance of the parts. An incision in the axis of the limb of two to three inches in length, with its centre over the fracture, enables the surgeon to remove the torn fascia from the surfaces of the fractured bone without raising them from their position. The drilling is also done *in situ* without disturbance, especially if the instrument has an eye near the point. The joints have not been washed out in these cases, except in Case 6, nor has drainage of any kind been employed. The skin has been sutured with horsehair, and the dressing not changed for ten days. The limbs were controlled in plaster of Paris. When the sutures were removed the plaster and dressing were continued for another week, and then the patient encouraged to move the limb. Formerly I was in the habit of continuing the plaster-of-Paris splint for several weeks, but I found that massage was then desirable to restore the muscles to their proper functional activity. Latterly I have found that if the splint is removed within two to three weeks the patient quickly recovers his normal powers of walking without any massage whatever. As a

rule such patients have not latterly been kept in hospital more than ten days after operation, and are in that case walking naturally within six weeks of their accidents.

As the wire does not pass through the cartilage, and is entirely extra-articular, there is no subsequent anxiety as to synovitis or ankylosis.

In no case of recent uncomplicated fracture was there any suppuration. In all of them a perfect joint was obtained within two or three months of the injury.

Another interesting point in relation to these cases is the fact that antiseptics were not used during the operation. The skin is prepared, as in all my cases, by soft soap (B. P.) being left on for three or four hours, and then thoroughly scrubbed into a lather with water. After this the skin is washed with ether and rubbed with perchloride of mercury 1 in 3000. Then a large dressing of dry Boric lint is applied to prevent the contact of unclean fingers till the patient is taken to the theatre for operation. During the operation the instruments, which have been thoroughly boiled, are merely immersed in sterile water. Sterilised wool sponges, sterilised towels and cloths, and sterilised water are alone used throughout the operation, and the dressing which has been applied has contained no antiseptic, but has been carefully sterilised. As before noted, the joints have not been washed out or irrigated. Personally I do not think that this absence of antiseptics is of any importance, but it is interesting as it shows that success can be obtained if organisms are not introduced from without. I think, however, that the absence of antiseptics makes the surgeon doubly careful as to his own hands, and to the many incidental ways by which he knows organisms are liable to be introduced. In such a narrow field of operation there is no necessity for any fingers to come in contact with the wound except those of the surgeon, and in his case it is only necessary when each fragment is held for the purpose of being drilled. The removal of blood-clot and fascia is easily and successfully accomplished by the use of a sharp spoon and a pair of scissors. The joint is not touched by fingers or instruments, and is only open to the air in the small interval between the fragments of the fractured patella. I see that some stress



has been laid by MacBurney<sup>1</sup> upon the advantage of transverse incision, so as to enable the torn fascia at the sides of the fractured patella to be reunited by buried sutures. To me this seems quite unnecessary, for as soon as the fragments have been brought firmly together by a wire suture the torn fascia is also closely approximated. A line of suture does not bring the edges any closer, and unless the wire breaks they are not likely to separate again. A transverse cicatrix must expose the patient to a greater risk of a compound fracture if the patella be again broken in any subsequent injury. It is therefore desirable to maintain the vertical incision unless some other and very good reason be shown for adopting one which is more likely to be torn open by violence.

The *second* table contains those cases in which a long interval had elapsed between the accident and the time at which they were admitted into hospital. In Case 2 the patient had been admitted at the time of the accident, but the fracture had not been recognised for reasons given in the table. In Case 3 the man had had his right patella fractured three times, and the last of these occasions was eighteen months before admission. Cases 4 and 5 were fractures of six and five months' standing before admission to hospital.

Case 1 was an exception as to the time of admission after the accident for which he was to be treated. But his patella had been broken before, and the fibrous band of union from the former fracture made the operation so complicated and difficult that it would not have been fair to count it amongst the cases of recent and simple fracture of patella. The fibrous band had to be excised in order to obtain bony union, and the upper fragment was so small that it would not stand drilling in the ordinary way for a thick wire, but had to be perforated by a finer instrument in two places for two very thin wire sutures. This case suppurated, but is the only one of the series that did. He was a fat alcoholic man, and by occupation a porter in a distillery. Therefore he was by no means a favorable subject for any operation, and I was sorry afterwards that I attempted it. He recovered with an ankylosed knee. The operation in each of the cases arranged in the second table was more or less severe compared to what

<sup>1</sup> *Annals of Surgery*, July, 1896, p. 45.

was required for a recent fracture. Either the chisel or saw was necessary to obtain a good bony union, as the fragments were firmly and completely covered with fibrous tissue, and this of course required much more disturbance of the surrounding parts including the joint.

In two of the cases (3 and 4) the fragments could not be approximated without a very wide section of the quadriceps extensor tendon and the removal of the tubercle of the tibia to a higher level. The latter part of this operation was a new experience to me, as I had not seen it done before, and had only heard that it was a possibility.<sup>1</sup> After I had obtained all the relief that was possible by section of the quadriceps extensor tendon a semilunar incision was made across the axis of the limb just below the tubercle of the tibia. Through this incision a few taps of the chisel detached the tubercle from the tibia. It was then pushed upwards and reunited at a higher level with a small ivory peg. Rather more than half an inch was obtained in this way, with the result that the fragments could just be brought together with a good deal of tension. In both of these cases the same operation was performed.

In neither was irrigation or drainage employed, and the wounds healed by first intention without any inflammation of the joints involved. For some months I was in doubt as to the perfect success of the operation, because both the patients seemed unable to raise the limb off the ground in the extended position. I thought that this was probably due to the altered leverage caused by the new attachment of the ligamentum patellæ. The joints were not fixed by adhesions, but the patients could not exercise proper control over their movements. That time alone was needed is shown in the case (3) of the man who had broken his patella three times, for at the end of a year after operation he was found to be carrying weights on his back upstairs—a necessary part of his proper work—which he had been unable to do since his last accident in 1893. In Case 4 the woman lives in the country, and in answer to a letter said her “knee was getting all right,” and thought it unnecessary to come and show herself.

<sup>1</sup> See paper subsequently published by Wm. W. Keen, of Philadelphia, in the ‘*Annals of Surgery*,’ 1895, vol. ii, p. 671.

This case must of course be seen again, and if the result proves as successful as that of the man (Case 3) I shall look upon this method of lifting the tubercle of the tibia as a very satisfactory plan of dealing with an old fracture of the patella with a very wide separation of the fragments. As much approximation as possible should be obtained by section of the quadriceps extensor tendon, but when that has been done and the fragments cannot be brought together, the tubercle of the tibia may be detached and fixed half an inch higher on the tibia, if by so doing bony union can be secured in the fractured patella. The occasions for the employment of this operation must of course be rare, as no surgeon would think of recommending it to those who have the widest gap in an old fractured patella, but yet have a serviceable knee.

All the cases in Table II except the first healed by first intention and obtained useful joints, and all of them except the first were treated in the same way as regards antiseptics as those in Table I, neither drainage nor irrigation being employed. It is a curious and suggestive fact that the only joint which was irrigated and drained suppurred.

With regard to the treatment of recent fractures of the patella I am inclined to think that more stress has been laid upon the advantages of the subcutaneous operation than is justified by our present experiences of the treatment of open wounds. It was not surprising some years ago, when Lister's statements and facts first took possession of the surgical mind, that the joints, which had always been dreaded as fields for operation, should be the last to be invaded by surgical enterprise, till the technique so necessary for success had been most thoroughly mastered. But surely this position no longer holds; the technique has been mastered by all those who do the higher class of surgical work; and if the surgeon feels assured that he can count under all ordinary circumstances upon primary union he may as well do the open operation as the subcutaneous.

A needle transfixing the tissues after a small incision of the skin, and entering the joint, is just as likely to carry organisms to the synovial membrane as a clean incision with a knife and retraction of the skin with hooks. In fact, most of us think that the deep layers of the skin are likely to con-

tain organisms even after the most thorough cleansing of the surface. All operations of whatever kind are, of course, exposed to the risk of errors in practice, inasmuch as the operator is only human; but the risks of an error of this kind are as great, to my mind, by the subcutaneous method as by the open operation.

The advantages of the open method of suturing the patella over the subcutaneous operation have been already alluded to, and need not be recapitulated.

**TABLE I.**—*Cases of Recent Fracture of Patella treated by Wire Suture through an Open Wound.*

Case.	Year.	Name.	Age	Sex	Date of fracture	Operation.	Remarks.
1	1894	J. R.	48	F., married	June 5th— Right patella	June 8th— One wire suture; no irrigation; no drainage; sterilised dressings. Left hospital June 22nd	Plaster splint retained 6 wks.; perfect move- ment. Full flexion and ex- tension of joint obtained within 3 months of the accident.
2	"	G. W.	34	M., carman	Aug. 1st— Left patella	Aug. 8th—Same as in Case 1. Left hospital Sept. 3rd	Oct. 4th— Ditto.
3	"	J. P.	22	M., fitter	Sept. 29th— Left patella	Oct. 3rd—Same as in Case 1. Left hospital Oct. 16th	Jan. 3rd, 1895— Ditto.
4	1895	G. D.	35	M.	Jan. 31st— Right patella; direct violence; comminuted fracture; much swelling	Feb. 19th— Same as in Case 1. Three sutures necessary. Left hospital March 16th	The long inter- val between the accident and oper- ation was due to the amount of swelling. The splint was also retained longer, and he required massage.
5	"	S. B.	40	M., carman	Feb. 7th— Left patella	Feb. 19th— Same as in Case 1. Left hospital March 16th	June 8th— Moveable joint. April 18th— Plaster splint removed. May 6th—Returned to work; perfect joint.



Case.	Year.	Name.	Age	Sex.	Date of fracture.	Operation.	Remarks.
6	1895	G. W.	41	M., coal porter	April 13th— Right patella; direct violence and much swelling	May 1st— Required flushing on account of clot in joint. Left hospital May 29th	May 14th— First dressing; small collection of thin pus from upper synovial pouch. May 21st—Healed. June 20th— Plaster splint removed. June 27th—Returned to work with moveable joint.
7	"	M. M.	44	F., married	June 4th— Left patella	June 14th— Same as in Case 1. Left hospital June 22nd	June 21st— First dressing; healed. July 19th—Plaster splint removed. Lost sight of, but written to July, 1896. Seen; perfect move- ment; no differ- ence between the two limbs.
8	"	J. S.	38	M., traveller	Oct. 23rd— Right patella	Nov. 6th— Same as in Case 1. Left hospital Nov. 28th	Healed by first intention. Dec. 12th—Plaster splint removed. Jan. 30th, 1896— Massage ordered on account of slight stiffness. Not seen again.
9	"	J. E.	27	M., green- grocer	Oct. 26th— Left patella	Nov. 6th— Same as in Case 1. Left hospital Nov. 26th	Healed by first intention. Dec. 19th—Plaster splint removed. Jan. 30th, 1896—Massage ordered. Apr. 6th —Perfect joint.
10	1896	E. H.	53	M., decorator	Dec. 18th, 1895— Left patella; direct violence; much swelling	Jan. 8th— Same as in Case 1. Left hospital Jan. 26th	Jan. 21st—First dressing. Feb. 13th—Splint removed. July 16th—Came to show himself in answer to letter. Is at work; can stand on flexed knee, and walks without lame- ness. Full ex- tension; flexion to right angles.

Case.	Year.	Name.	Age.	Sex.	Date of fracture.	Operation.	Remarks.
11	1896	S. F.	41	M., carpenter	Dec. 21st, 1895— Right patella; direct violence; much swelling	Jan. 8th— Same as in Case 1. Left hospital Jan. 15th	Jan. 23rd—First dressing done in out-patient room. Feb. 6th— Splint removed. Feb. 27th—Mas- sage ordered. July 23rd— Moveable joint, but walks rather stiffly.
12	„	S. G.	31	F., married	Dec. 23rd, 1895—Very stout woman, weighing 15 st. Right patella from fall down- stairs; much bruising and swelling	Jan. 15th— Same as in Case 1. Left hospital Feb. 2nd	Jan. 24th— First dressing. Feb. 13th— Splint removed. April 9th— Perfect joint.
13	„	A. P.	41	F., married	May 11th— Right patella (old fracture of left patella, with wide separation)	May 29th— Same as in Case 1. Left hospital June 14th	June 14th— Without any splint. July 9th—Perfect joint; walks well, without any stiffness. She feels the right leg more reliable than the left.
14	„	A. W.	22	F., single, dancer; height, 4 feet	July 6th—Left patella (right patella frac- tured in 1893, treated by ap- paratus; $\frac{1}{2}$ inch separation)	July 10th— Same as in Case 1 Left hospital July 31st	July 24th— First dressing. Sutures removed and splint dis- continued.

TABLE II.—Cases of Old Fracture of Patella treated in a similar manner.

Case	Year	Name	Age	Sex	Date of fracture.	Operation.	Remarks
1	1894	P. M.	42	M., porter at a distillery	April 12th— Left patella, which had also been fractured 4 years pre- viously	April 18th—A very small upper fragment and a fibrous band; two wire sutures necessary; irrigated and drained; steri- lised dressings. Left hospital Aug. 8th	Alcoholic man. Suppuration took place. This was the only case in which a drainage-tube was used. Recovered with ankylosed knee.
2	1895	S. T.	27	F., married, cook	Sept. 24th, 1894—Patient was so fat that a very small fragment was not recognised. Sent home in a plaster-of- Paris splint	Jan. 2nd, 1895— Readmitted for operation. Sur- faces had to be refreshed with chisel; upper fragment so small that two fine wire sutures were used; steri- lised dressings. Left hospital Jan. 24th	Feb. 28th— Leather knec- cap ordered on account of her weight. April 25th— Full movement of knee-joint. July 11th— Came on account of sprained ankle; knee perfect.
3	"	H. M.	51	M., packer	Right patella fractured three times: 1. Feb., 1874. 2. July, 1875. 3. July, 1893, 18 months be- fore admission. Very wide separation of fragments, and a useless limb for his par- ticular work; can only earn half his normal wages	Feb. 20th, 1895—Com- plete division of quadriceps ext. tendon, and chiselled off the tubercle of tibia, and pegged it down at a higher level. Fragments of patella refreshed with gouge; could only just be brought together and united by two wire sutures; no drainage; steri- lised dressings. Left hospital March 23rd	Healed by first intention. May 7th—Splint dis- continued; can raise extended leg. June and July—Imper- fect power over movements. Lost sight of. April, 1896— Came in answer to letter; perfect joint; can carry weights on his back upstairs. A better limb now than before last accident in 1893. Earning full wages.

Case.	Year.	Name.	Age.	Sex.	Date of fracture.	Operation.	Remarks.
4	1895	K. H.	32	F., married	Fracture of right patella 6 months before admission on March 4th, 1895; wide separation of fragments, and unable to raise leg	March 13th, 1895—Same operation as in Case 3. Could only just bring fragments together after refreshing them with saw; one wire suture; no drainage. Left hospital April 6th	Healed by first intention. June 21st, 1895—Joint moveable and patella free, but cannot raise leg nor bend knee; massage ordered. July, 1896—Answered letter: "Knee getting all right, as she can bend the joint."
5	1896	J. G.	40	M., labourer	Left patella fractured 5 months before admission. Jan. 20th, 1896—Had been treated by plaster of Paris in infirmary. Synovitis and wide separation of fragments	Jan. 29th, 1896—Had to use saw to both fragments; two wire sutures; no drainage; sterilised dressings. Left hospital Feb. 13th	Healed by first intention. Lost sight of. July, 1896—Wrote in answer to letter: "All right; at work."



NOTES  
ON THE  
EXAMINATION OF THE BODIES OF  
FIFTY-EIGHT CHILDREN  
BORN DEAD OR SHORTLY DYING.  
(THIRD SERIES.)

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IN vols. viii and x of the 'St. Thomas's Reports' will be found two series of fifty cases each, of children born dead or shortly dying.

Some of the pathological conditions met with are noticed in the former series, besides certain medico-legal questions.

The following series has been continued on the same lines.

As to the pathological conditions met with among the 58 cases, there were 11 intra-uterine deaths; the remaining 47 presented no such signs. Of these latter, 23 gave no evidence of respiration having taken place, while 10 gave evidence of imperfect respiration, and in 12 there was evidence of perfect respiration. Thirty-five of the 58 bodies examined were males, and 21 females; in two cases the sex was not recorded.

Taking the whole 158 children in the three series, there were 86 males and 70 females, and 2 in which the sex is not recorded; thus it appears that out of every 100 children stillborn there are 54·43 males.

This is apparently a greater excess of mortality among the males than is actually the case, for it should be remembered that more males are born than females.

Taking the births in St. Thomas's Hospital Charity during the last eighteen years (1877—1895), there were born 38,392 children the sex of whom is recorded. There were 19,949 males, and only 18,443 females, *i.e.* in every 100 children born there are 51·96 males. Hence, if we deduct 51·96 from 54·43, the proportion of male stillbirths, we get 2·47, which represent the actual excess of male children stillborn in every hundred. The only reasonable cause of this seems to be the greater weight, and therefore the greater bulk of the male children, for it is found in the whole three series that there were 28 males of 18 inches and upwards in length, and 21 females. The males weighed 81,935 grms.; the females 57,634 grms., *i.e.* the males averaged 2926·25 grms., and the females averaged 2792·1 grms.; the males, therefore, are 134·15 grms., or 4¾ oz., heavier than the females.

#### SMALL DISSEMINATED GROWTHS IN TWO LIVERS.

In the present series, among the intra-uterine deaths two livers were noticed to have small disseminated growths. A history of syphilis was clear in one case and highly probable in the other. These livers were like the others previously described in the former paper. Both of the present cases had also ascites and great enlargement of the spleen (see Cases 116 and 128). These two cases, together with other four met with in the two former series, make six altogether. In five of the cases there was undoubtedly syphilis in one or other parent, with a strong probability of its existing in the sixth. The syphilis was of recent origin in at least five of the parents.

In inherited syphilis the liver has a tendency to be the first organ attacked. In the 'Lancet' of 1876 I published a paper

on the "Origin of Hereditary Syphilis," in which I maintained that the foetus was not as a rule infected with the disease until the maternal blood passed into the circulation of the child, and that this did not take place unless or until the placenta became detached, in which case there would be rupture of the placental vessels, and then the blood of the mother might be squeezed by the uterine contractions into the foetal circulation. If this should be the way in which the child is contaminated, it would explain why the liver would be the organ first affected, for it is the organ through which the blood returning from the placenta first passes. We also may by the same hypothesis explain why by far the great majority of children are born apparently healthy, but show symptoms of syphilis in about six weeks. It would also offer an explanation of icterus neonatorum; for if, as a rule, the maternal blood gets squeezed into the foetal circulation, it would act as foreign blood to the child, and the icterus neonatorum would thus be accounted for in the same way as the icterus which follows transfusion of blood. The condition of icterus neonatorum was markedly met with in Case 118, which was one of triplets; also in Case 139 and in Case 155. All the children had lived, one fifty-two hours, another ten, and the last some days. The icterus generally comes on about the third day, and then gradually subsides; but it may come on earlier. If well marked it should certainly be taken into account as evidence of the child having lived a day or two after birth. Case 139, however, only lived ten hours, but in this there was an independent cause for the icterus, which was profound, the conjunctiva being also yellow.

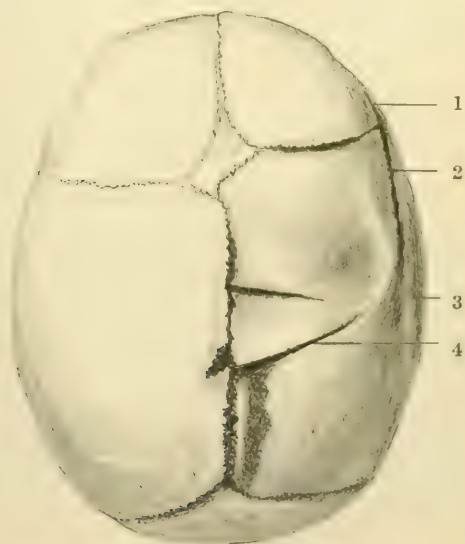
There was no septum between the auricles of the heart. The heart itself was about twice as heavy as a normal heart for a foetus 18½ inches long, which was the length of the foetus in question. The spleen was also about five times the normal weight, and the liver was large, of a dark chocolate-brown colour with a tinge of yellow. The history of this case is given further on p. 137.

## RECENTLY EFFUSED BLOOD IN THE ABDOMEN.

Case 157 had this condition. It was occasioned by rupture of the liver. The mother had a breech presentation. Most likely this condition was caused by the manipulations of the accoucheur. It is highly reprehensible to apply any extractive force upon the soft parts of the foetus. The hands should pull only upon the pelvis and legs, but not above the pelvis.

## INJURY TO HEAD DURING NATURAL LABOUR.

CASE 131.—The child was born living, but died in a quarter of an hour. There was blood effused over most of the brain, which had collected also at the base. The caput succedaneum was formed over the posterior part of the right parietal bone, which was partially overlapping the left. It was an immature female child, about eight and a half months' uterine life.



1. Fracture of frontal. 2. Fracture of parietal. 3. Parietal eminence.  
4. Fracture of parietal.



The uterine action of the mother is said to have been violent, possibly from the administration of ergot.

CASE 156.—In this case the right parietal and right frontal bone were fractured as shown in the figure along the lines of development, and the right parietal was deeply indented. The caput succedaneum was over the left parietal. The child was born dead, but showed signs of imperfect respiration.

### MALFORMATIONS.

One of the children—a male—examined had a supernumerary finger on the ulnar side of the right hand. Two other children were born without cerebral hemispheres. In one of these (Case 119), a male, the left kidney was absent, and neither adrenal could be found. The right kidney was very large,—in fact, it weighed 8·77 grms. ; the combined weight of the kidneys of a normal male foetus of the same length being 7·9 grms. This fact seems to point to compensatory hypertrophy having taken place in the same way as we know it to take place in adults, where one kidney is rendered useless by disease or other cause. If this be so, then it is additional evidence that the kidneys of the foetus are actively performing their functions before birth.

CASE 115.—The other child without cerebral hemispheres was a female. The adrenals were very small, weighing—the right ·31 grm., and the left ·39 grm.; whereas in a normal foetus of about the same length they weighed 1·76 and 1·73 respectively, or more than five times as much.

CASE 139.—In this case, a male, there was no intra-auricular septum. The spleen was very large, weighing 45·9 grms., whereas it should not have weighed more than 10 grms. The child lived about ten hours, was strongly jaundiced, and the conjunctiva very yellow. There was no malformation about the bile-ducts. The child died with symptoms of asphyxia, and vomiting bloody mucus.

*The history.*—The mother, aged thirty years, had one child before, which lived twenty-eight hours and died jaundiced, and with other symptoms similar. Both children at birth were apparently healthy, and cried lustily. There has been

a miscarriage at two months, between the birth of above children. The mother has never suffered from any symptoms referable to heart disease. A distinct blowing endocardial systolic murmur can be heard over the region of the pulmonary valve. It can be heard down the left side of the sternum, faintly on right side and at apex, and not at all in the axilla.

The husband had been twice married, and he had had eight children by his first wife, two of whom are alive and well; the others died in childhood abroad, of scarlatina, sun-stroke, &c.

In Case 101 the kidneys were united below. This malformation is known as the horse-shoe kidney, and is mentioned as a variety of the kidney by Quain (see p. 927, vol. ii, 'Quain's Anatomy'). The above case also had double bare-lip. The mother was a patient in St. Thomas's Home, who was suffering from retroversion of the gravid uterus. This I reduced, but the mother aborted fifty hours after.

CASE 111.—In this case the abdominal walls had never closed in, so that the whole of the liver, the intestines, and the abdominal cavity were only covered by a thin membrane, which was adherent to the anterior surface of the liver, and was attached at the sides to the undeveloped abdominal walls, and at the lower end was attached to the upper edge of the bladder, which was extroverted. The organs of generation were malformed, the male approaching the female type. There was besides no anus. The left kidney was cystic and of no functional use. It weighed 9.74 grms. The right kidney weighed 4.02 grms., which is about the combined weight of the kidneys in a normal foetus of the same length. Compensatory hypertrophy seems here also to have taken place, but this was only in a foetus of  $11\frac{1}{2}$  inches, or between the fifth and sixth month of intra-uterine life. (See page 137 for another case.)

Sir George Humphry, in the 'Journal of Anatomy and Physiology,' vol. xxiii, p. 273, and also p. 387, doubts whether the angle which the thigh-bone makes with its neck decreases with age, *i. e.* if it becomes less obtuse. In women it is known that the angle is less than in men. In foetus the angle gradually decreases as the foetal age increases, and this

is shown in Table I, in which also it will be seen that even during foetal life this angle is smaller in the females than in the males.

TABLE I.—*The Angle that the Neck of the Femur makes with the Shaft.*

No. of fetus in table	Length of fetus.	Angle of neck and shaft of femur.	
		Males.	Females
102	7 $\frac{1}{2}$	—	125°
105	10 $\frac{1}{2}$	—	126°
109	11 $\frac{1}{2}$	131·5	—
122	15 $\frac{1}{2}$	—	134°
129	16 $\frac{1}{2}$	—	127°
136	17 $\frac{1}{2}$	122°	—
138	18 $\frac{1}{2}$	138	—
145	19 $\frac{1}{2}$	—	134°
149	20 $\frac{1}{2}$	—	133°
156	21	147°	—
157	23	—	137·5°
		134·6°	130·8°

In a male adult moukey the angle was 130°.

#### MEDICO-LEGAL QUESTIONS.—SUPPOSED URIC ACID DEPOSITS IN THE DUCTS OF BELLINI.

In two cases, 143 and 148, brown streaks were seen with the naked eye in the pyramids of the kidneys; they were precisely similar to those described in vol. x of these Reports.

I have never once seen them in children born dead, although they have been looked for; nor have I observed them in children who have lived less than forty-eight hours. Table II contains *all* the cases that have survived their birth, and they are arranged according to the time they lived, those that lived the shortest while being placed first. It will be seen by the table that streaks may be expected to be found in children that have survived their birth 48 hours to 216 hours, and are over 16  $\frac{3}{4}$  inches long. That it is not a pathological

condition, but a physiological one, I have little doubt from the fact that these streaks appear so constantly in children that

TABLE II.

No.	Length of child.	Time child lived.	Condition of kidneys.
69	15 $\frac{3}{16}$	A few minutes	No streaks.
96	20 $\frac{3}{16}$	"	"
31	16 $\frac{8}{16}$	$\frac{1}{4}$ of an hour	"
66	14 $\frac{14}{16}$	1 hour	"
70	15 $\frac{7}{16}$	1 "	"
79	17 $\frac{2}{16}$	1 "	"
100	21 $\frac{6}{16}$	5 hours	"
63	14 $\frac{7}{16}$	6 "	"
126	—	7 "	"
132	16 $\frac{10}{16}$	8 "	"
139	18 $\frac{2}{16}$	10 "	"
81	17 $\frac{1}{16}$	12 "	"
61	14 $\frac{3}{16}$	14 "	"
121	14 $\frac{6}{16}$	32 "	"
143	18 $\frac{14}{16}$	48 "	Streaks.
74	16 $\frac{12}{16}$	48 "	"
76	17 $\frac{1}{16}$	48 "	"
85	17 $\frac{5}{16}$	50 "	"
118	14	52 "	No streaks.
77	17 $\frac{5}{16}$	56 "	Streaks.
95	20 $\frac{2}{16}$	96 "	No streaks.
148	19 $\frac{12}{16}$	216 "	Streaks.
156	20 $\frac{10}{16}$	Some days	No streaks.
150	20	21 days	"

have been examined after surviving their birth between 48 hours and 216 hours, together with the fact that they always appear in both kidneys.

#### THE VALUE OF THE STATIC TESTS OF RESPIRATION.

As in my former papers, I have arranged the suitable cases in three classes in Table III. This table contains all cases in which it was ascertained whether the child was stillborn or had lived. It does not contain the cases of intra-uterine maceration, or cases which weighed less than 900 grms. The first class contains eight cases, all of which were stillborn, and had not respired; the second contains nine cases in which imperfect



TABLE III.

*Cases in which no Respiration had taken place.*

No.	Sex.	Weight of body.	Weight of lungs.	Relation of lungs to body. Ploucquet's test.	Relation of lungs to liver. Bernt's test.	Relation of lungs to kidneys.	Sp. gr. of lungs.
125	M.	1182	23.8	1 : 49.6	1 : 2.77	1 : .546	
135	M.	2100	36.7	1 : 57.2	1 : 1.50	1 : .411	
133	F.	2520	47.27	1 : 53.3	1 : 3.28	1 : .407	
141	M.	2610	47.1	1 : 55.4	1 : 1.38	1 : .518	
152	M.	2930	52.7	1 : 55.7	1 : 2.50	1 : .570	
144	M.	3100	55.0	1 : 56.4	1 : 2.58	1 : .404	
153	M.	3200	48.3	1 : 66.2	1 : 3.52	1 : .532	1042
155	M.	3280	63.5	1 : 51.7	1 : 2.21	1 : .471	1043
		2615.2	46.80	1 : 54.89	1 : 2.45	1 : .476	1042.5

*Cases in which Imperfect Respiration had taken place.*

120	?	985	30.26	1 : 32.6	1 : 2.64	1 : .385	
123	M.	1183	31.24	1 : 37.9	1 : 1.83	1 : .355	1037
127	F.	1230	22.2	1 : 55.4	1 : 3.15	1 : .527	1035
124	M.	1373	22.14	1 : 62.0	1 : 3.78	1 : .511	1026
140A	M.	2040	45.25	1 : 45.1	1 : 1.66	1 : .444	1035
146	M.	2700	58.67	1 : 45.0	1 : 2.06	1 : .481	
150	M.	2790	60.39	1 : 46.2	1 : 3.22	1 : .490	
151	F.	2875	57.0	1 : 50.4	1 : 3.02	1 : .446	
147	F.	4810	83.65	1 : 57.5	1 : 3.24	1 : .403	{ 1039, R. lung Float, L. lung
		2220.7	45.6	1 : 48.65	1 : 2.78	1 : .445	1034.4

*Cases in which Perfect Respiration had taken place.*

132	M.	1533	40.17	1 : 38.2	1 : 1.76	1 : .288	Float
142	M.	2110	50.82	1 : 41.5	1 : 2.36	1 : .392	
154	F.	2777	62.49	1 : 44.4	1 : 2.88	1 : .465	"
139	M.	2800	49.0	1 : 57.1	Not weighed	1 : .393	"
147	M.	3027	88.9	1 : 34.0	1 : 2.00	1 : .368	"
148	M.	3180	80.4	1 : 39.5	1 : 2.39	1 : .308	"
		2571.2	62.00	1 : 41.5	1 : 3.48	1 : .444	

The weights are given in grammes.

respiration had taken place; and the third contains six in which perfect respiration had taken place. In the first class, where the children were stillborn, the average relation of the lungs to the body was as 1 : 54.89; in the second class, where imperfect respiration had taken place, the lungs were

to the body as 1 : 48·65 ; and in the third class, where perfect respiration had taken place, the lungs were to the body as 1 : 41·5.

With regard to the relation of the lungs to the liver, in the first class we have the lungs compared to the liver as 1 : 2·45 ; in the second class as 1 : 2·78 ; in the third class as 1 : 3·48. This, indeed, is exactly the reverse to what we should expect, for, as the liver is heavier than the combined weight of the lungs, we ought, as in the first class, to have had a descending series instead of an ascending series, which would, as far as it goes, prove that the liver was heavier as compared with the lungs after respiration than before.

There is this practical difficulty in taking the liver for comparison, and that is the ready way in which it loses its blood after being removed from the body, and unless ligatures be put upon the vena porta before the liver is cut out, the weight is altogether worthless as a means of comparison.

One of the chief values of this, "the static test," is when the defence is that the lungs float from other causes than respiration, for it cannot be relied on as a proof that the child had respired unless the specific gravity of the lungs were also altered.

In all cases where imperfect respiration has taken place, in so far as the lungs do not float, the specific gravity ought to be taken, for this is the only scientific way in which we are able to gauge the amount of air that has entered the lungs. The specific gravity is easily taken by means of a good pair of apothecary's scales. It is of much consequence that the cord by which the pan is suspended in water should be replaced by wire, for the cord becomes heavier by taking up water by its wick-like property above the level of the water in the vessel used for taking the specific gravity of the lungs. When the pan is placed in the water the opposite pan will at once go down, and a counterpoise made conveniently of lead cut by degrees, so that the pan in the water with the counterpoise exactly balances the opposite pan.

The lungs are first weighed separately in air in the ordinary manner. Say that the right weighs 24·9 grms., and the left 20·35 grms. The counterpoise is next placed in the

pan which goes into the water, and the right and left lung separately weighed in water, taking care with each operation that the lung is wholly submerged. Say that the right lung now weighs 0·86 grm., and the left 0·86 grm.

Now to determine the specific gravity of the right lung :

24·9 weight of right lung in air.

·86 weight of right lung in water.

---

24·04

∴ 24·04 : 24·9 :: 1000 :  $x$

∴ Sp. gr. of right lung is 1035·7

The water used ought to be distilled. This operation is easily done when the apparatus is at hand, and the determination need not take more than five minutes.

#### POSITION OF UMBILICUS.

Table IV is drawn up for the purpose of showing the distance of the umbilicus from the centre of the body.

In only three cases was it above, one being a foetus without cerebral hemispheres; in all the rest it was below, and the average distance below was ·804, or a little less than  $\frac{1}{16}$  inch.

#### THE LENGTH OF THE EXTENDED ARMS AS COMPARED WITH THE LENGTH OF THE BODY.

Among the fifty-eight bodies there were forty-two in which the length of the extended arms fell short of the length of the body, and twelve in which it exceeded it, and in four the respective lengths were identical. On an average it was found that the length of the extended arms is less by ·376 of an inch than the length of the body.

#### CENTRES OF OSSIFICATION.

The bones to which attention has chiefly been directed are the sternum, the os calcis, the astragalus, and the epiphysis at

the lower end of the femur, and to some extent the cuboid. The observations were made more or less completely in 129 fœtus, and the results are tabulated in Table V. In this table, when there were two or more centres for each division of the bone, they are considered as one: for instance, in the manubrium, two or more centres often appear at the same period; when this is the case they are considered together as a single centre for that bone.

It is to be remarked that when two centres appear in the manubrium, they are placed one above the other in the long axis of the body, but when two centres occur in any piece of the gladiolus they are placed laterally. From the table it will be noticed that the centre for the lower epiphysis of the femur occurs in a female fœtus of  $16\frac{1}{16}$  inches, *i. e.* at about the eighth month of intra-uterine life. Its presence, therefore, cannot be considered as a proof of uterine maturity. The observations are not so complete concerning the cuboid in the tarsus, but they are sufficient to indicate that the centre for this bone appears a little later than that for the epiphysis of the femur. When, therefore, any question arises as to the uterine maturity of the child, the cuboid as well as the epiphysis of the femur should be examined.



	Sex.	Half the length of body	Length from heels to umbilicus.	Differences of the distance
101	M.	$1\frac{0}{10}$	$1\frac{3}{10}$	
102	F.	$3\frac{1}{10}$	$1\frac{0}{10}$	
103	M.	4	$3\frac{0}{10}$	
104	M.	$4\frac{2}{10}$	$3\frac{7}{10}$	
105	F.	$5\frac{7}{10}$	$4\frac{1}{10}$	
106	M.	$5\frac{0}{10}$	$4\frac{0}{10}$	
107	M.	$5\frac{8}{10}$	$4\frac{2}{10}$	
108	F.	$5\frac{9}{10}$	$4\frac{1}{10}$	
109	M.	$5\frac{10}{10}$	$4\frac{1}{10}$	
110	M.	$5\frac{10}{10}$	$5\frac{3}{10}$	
111	?	$5\frac{10}{10}$	$5\frac{1}{10}$	
112	F.	$6\frac{1}{10}$	$5\frac{7}{10}$	
113	F.	$6\frac{5}{10}$	$5\frac{8}{10}$	
114	M.	$6\frac{8}{10}$	6	
115	F.	$6\frac{1}{10}$	$7\frac{1}{10}$	
116	M.	$6\frac{12}{10}$	5	1
117	M.	$6\frac{10}{10}$	$5\frac{3}{10}$	1
118	M.	7	$6\frac{1}{10}$	
119	M.	$7\frac{9}{10}$	$7\frac{1}{10}$	
120	?	$7\frac{5}{10}$	$6\frac{1}{10}$	1
121	F.	$7\frac{3}{10}$	$5\frac{15}{10}$	1
122	F.	$7\frac{9}{10}$	$6\frac{2}{10}$	1
123	M.	$7\frac{9}{10}$	$6\frac{8}{10}$	1
124	M.	$7\frac{12}{10}$	$6\frac{10}{10}$	1
125	M.	$7\frac{13}{10}$	7	
126	F.	$7\frac{1}{10}$	$6\frac{12}{10}$	1
127	F.	$7\frac{1}{10}$	7	
128	M.	8	$6\frac{4}{10}$	1
129	F.	$8\frac{3}{10}$	$6\frac{12}{10}$	1
130	F.	$8\frac{1}{10}$	$7\frac{9}{10}$	
131	F.	$8\frac{1}{10}$	$6\frac{14}{10}$	1
132	M.	$8\frac{5}{10}$	$7\frac{4}{10}$	1
133	F.	$8\frac{10}{10}$	$8\frac{5}{10}$	
134	M.	$8\frac{11}{10}$	$8\frac{1}{10}$	
135	M.	$8\frac{13}{10}$	$7\frac{9}{10}$	1
136	M.	$8\frac{14}{10}$	8	
137	F.	$8\frac{15}{10}$	$8\frac{1}{10}$	
138	M.	$9\frac{3}{10}$	$8\frac{3}{10}$	1
139	M.	$9\frac{1}{10}$	$8\frac{8}{10}$	
140	M.	$9\frac{4}{10}$	$7\frac{2}{10}$	2
141	M.	$9\frac{7}{10}$	$8\frac{10}{10}$	
142	M.	$9\frac{6}{10}$	$8\frac{8}{10}$	
143	M.	$9\frac{7}{10}$	$8\frac{10}{10}$	
144	F.	$9\frac{8}{10}$	8	
145	M.	$9\frac{10}{10}$	$8\frac{8}{10}$	1
146	F.	$9\frac{12}{10}$	$8\frac{14}{10}$	
147	M.	$9\frac{16}{10}$	$9\frac{2}{10}$	
148	M.	$9\frac{14}{10}$	$8\frac{8}{10}$	1
149	M.	$9\frac{14}{10}$	$9\frac{3}{10}$	
150	F.	10	$9\frac{3}{10}$	
151	M.	10	$8\frac{11}{10}$	1
152	F.	$10\frac{2}{10}$	$9\frac{1}{10}$	1
153	M.	$10\frac{3}{10}$	$9\frac{3}{10}$	1
154	M.	$10\frac{1}{10}$	9	1
155	F.	$10\frac{5}{10}$	$9\frac{8}{10}$	
156	M.	$10\frac{5}{10}$	$8\frac{13}{10}$	1
157	M.	$10\frac{8}{10}$	$9\frac{10}{10}$	
158	F.	$11\frac{8}{10}$	$14\frac{15}{10}$	

The dark line in the table represents  
was situated below the centr

TABLE IV.

					The scale is magnified twice its proper size.																																
	Sex.	Half length of body	Length from hook to umbilicus,	Differences of distance from centre of body.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
101	M.	1 $\frac{1}{16}$	1 $\frac{1}{16}$	1 $\frac{1}{16}$																																	
102	F.	3 $\frac{1}{16}$	4 $\frac{1}{16}$	1 $\frac{1}{16}$ above																																	
103	M.	4 $\frac{1}{16}$	3 $\frac{1}{16}$																																		
104	M.	4 $\frac{1}{16}$	3 $\frac{1}{16}$																																		
105	F.	5 $\frac{1}{16}$	4 $\frac{1}{16}$																																		
106	M.	5 $\frac{1}{16}$	4 $\frac{1}{16}$																																		
107	M.	5 $\frac{1}{16}$	4 $\frac{1}{16}$																																		
108	F.	5 $\frac{1}{16}$	4 $\frac{1}{16}$																																		
109	M.	5 $\frac{1}{16}$	4 $\frac{1}{16}$																																		
110	M.	5 $\frac{1}{16}$	5 $\frac{1}{16}$																																		
111	?	5 $\frac{1}{16}$	5 $\frac{1}{16}$																																		
112	F.	6 $\frac{1}{16}$	5 $\frac{1}{16}$																																		
113	F.	6 $\frac{1}{16}$	5 $\frac{1}{16}$																																		
114	M.	6 $\frac{1}{16}$	6 $\frac{1}{16}$																																		
115	F.	6 $\frac{1}{16}$	7 $\frac{1}{16}$	1 $\frac{1}{16}$ above																																	
116	M.	6 $\frac{1}{16}$	5 $\frac{1}{16}$																																		
117	M.	6 $\frac{1}{16}$	5 $\frac{1}{16}$																																		
118	M.	7 $\frac{1}{16}$	6 $\frac{1}{16}$																																		
119	M.	7 $\frac{1}{16}$	7 $\frac{1}{16}$																																		
120	?	7 $\frac{1}{16}$	6 $\frac{1}{16}$																																		
121	F.	7 $\frac{1}{16}$	5 $\frac{1}{16}$																																		
122	F.	7 $\frac{1}{16}$	6 $\frac{1}{16}$																																		
123	M.	7 $\frac{1}{16}$	6 $\frac{1}{16}$																																		
124	M.	7 $\frac{1}{16}$	6 $\frac{1}{16}$																																		
125	M.	7 $\frac{1}{16}$	7 $\frac{1}{16}$																																		
126	F.	7 $\frac{1}{16}$	6 $\frac{1}{16}$																																		
127	F.	7 $\frac{1}{16}$	7 $\frac{1}{16}$																																		
128	M.	8 $\frac{1}{16}$	6 $\frac{1}{16}$																																		
129	F.	8 $\frac{1}{16}$	6 $\frac{1}{16}$																																		
130	F.	8 $\frac{1}{16}$	7 $\frac{1}{16}$																																		
131	F.	8 $\frac{1}{16}$	6 $\frac{1}{16}$																																		
132	M.	8 $\frac{1}{16}$	7 $\frac{1}{16}$																																		
133	F.	8 $\frac{1}{16}$	8 $\frac{1}{16}$																																		
134	M.	8 $\frac{1}{16}$	8 $\frac{1}{16}$																																		
135	M.	8 $\frac{1}{16}$	7 $\frac{1}{16}$																																		
136	M.	8 $\frac{1}{16}$	8 $\frac{1}{16}$																																		
137	F.	8 $\frac{1}{16}$	8 $\frac{1}{16}$																																		
138	M.	9 $\frac{1}{16}$	8 $\frac{1}{16}$																																		
139	M.	9 $\frac{1}{16}$	8 $\frac{1}{16}$																																		

The dark line in the table represents the middle line of the body. The horizontal plain lines drawn from this represent the comparative distance the umbilicus was situated below the centre of the body. The dotted lines of the scale mark the odd  $\frac{1}{16}$ ths, whereas the plain lines indicate the even  $\frac{1}{16}$ ths.

T A B L E S.

TABLE V.

## MALES.

No.	Age in days.	Length.	Sternum.						Os calcis.	Astragalus.	Lower epiphysis of femur.	Cuboid.
			Manubrium	1st piece of gladiolus.	2nd piece.	3rd piece.	4th piece.	Ensiform cartilage.				
101	76	3 $\frac{1}{16}$	0	0	0	0	0	0	0	0	0	—
51		5	0	0	0	0	0	0	0	0	0	—
1	35	5 $\frac{1}{16}$	0	0	0	0	0	0	0	0	0	—
52	107	7 $\frac{3}{16}$	0	0	0	0	0	0	0	0	0	—
103		8	0	0	0	0	0	0	0	0	0	—
104	122	8 $\frac{4}{16}$	0	0	0	0	0	0	0	0	0	—
53		8 $\frac{1}{16}$	0	0	0	0	0	0	0	0	0	—
106	151	10 $\frac{1}{16}$	1	1	1	0	0	0	0	0	0	—
107		10 $\frac{1}{16}$	1	1	1	0	0	0	0	0	0	—
54		11 $\frac{1}{16}$	1	1	0	0	0	0	0	0	0	—
110		11 $\frac{1}{16}$	1	1	0	0	0	0	0	0	0	—
55		11 $\frac{1}{16}$	0	0	0	1	0	0	1	0	0	—
114		13 $\frac{1}{16}$	1	1	1	0	0	0	1	0	0	—
61		13 $\frac{1}{16}$	1	1	1	0	0	0	1	1	0	—
117		13 $\frac{1}{16}$	1	1	1	1	0	0	1	0	0	—
58		14	1	0	0	0	0	0	1	0	0	—
59		14	1	1	1	1	1	0	1	1	0	—
118		14	1	1	1	0	0	0	1	1	0	—
61		14 $\frac{3}{16}$	1	1	1	0	0	0	1	1	0	—
119		14 $\frac{3}{16}$	1	1	1	1	0	0	1	1	0	—
64		14 $\frac{3}{16}$	1	1	1	1	0	0	1	1	0	—
65		14 $\frac{1}{16}$	1	0	1	0	0	0	0	0	0	—
66		14 $\frac{1}{16}$	1	1	1	1	0	0	1	1	0	—
68		15 $\frac{1}{16}$	1	0	1	0	0	0	1	1	0	—
123		15 $\frac{2}{16}$	1	1	1	1	0	0	1	1	0	—
70		15 $\frac{1}{16}$	1	1	1	0	0	0	1	0	0	—
22		15 $\frac{1}{16}$	1	1	1	0	0	0	1	1	0	—
124		15 $\frac{1}{16}$	1	1	1	1	1	0	1	1	0	—
125		15 $\frac{1}{16}$	1	1	1	1	0	0	1	0	0	—
23		15 $\frac{2}{16}$	1	1	0	0	0	0	1	1	0	—
26		15 $\frac{1}{16}$	1	1	1	1	1	0	1	0	0	0
71		15 $\frac{1}{16}$	1	1	1	1	0	0	1	1	0	—
72		16	1	1	1	0	0	0	1	0	0	—
73		16 $\frac{1}{16}$	1	1	1	0	0	0	1	1	0	—
132		16 $\frac{1}{16}$	1	1	1	1	0	0	1	1	0	—
75		16 $\frac{1}{16}$	1	1	1	1	0	0	1	1	0	—
65		17 $\frac{1}{16}$	1	1	1	1	0	0	1	1	1	—
79		17 $\frac{1}{16}$	1	1	1	1	1	0	1	1	1	—
80		17 $\frac{1}{16}$	1	1	1	1	0	0	1	1	1	—
134		17 $\frac{1}{16}$	1	1	1	1	0	0	1	1	1	—
83		17 $\frac{2}{16}$	1	1	1	1	1	0	1	1	0	—
30		17 $\frac{1}{16}$	—	—	—	—	—	—	—	—	1	—
136		17 $\frac{2}{16}$	0	0	0	0	0	0	1	1	0	—
32		17 $\frac{1}{16}$	1	1	1	1	0	0	1	1	0	—
33		17 $\frac{1}{16}$	1	1	1	0	0	—	—	—	—	—



TABLE V.

## FEMALES.

Cuboid.	Lower epiphysis of femur.	Astragalus.	Os calcis.	Sternum.						Length.	Age in days.	No.
				Eniform cartilage.	4th piece of gladiolus.	3rd piece.	2nd piece.	1st piece.	Manubrium			
—	0	0	0	0	0	0	0	0	0	7 $\frac{1}{16}$		102
—	0	0	0	0	0	0	0	0	0	10 $\frac{1}{16}$		105
—	0	0	0	0	0	0	1	1	1	11 $\frac{2}{16}$		108
—	0	0	1	0	0	0	1	1	1	12 $\frac{2}{16}$		112
—	0	0	1	0	0	0	1	1	1	12 $\frac{2}{16}$		113
—	—	—	—	—	1	1	1	1	1	12 $\frac{2}{16}$	184	5
—	0	0	1	0	0	0	0	0	1	12 $\frac{13}{16}$		6
0	0	1	1	0	0	0	1	1	1	12 $\frac{14}{16}$		56
—	0	1	1	0	0	0	0	0	0	13		8
—	0	1	1	0	0	0	0	0	1	13		9
—	—	—	—	0	0	0	0	0	1	13 $\frac{5}{16}$		115
—	—	1	1	—	—	—	—	—	—	13 $\frac{8}{16}$		10
—	0	1	1	0	0	1	1	1	1	14		60
—	0	0	0	0	0	0	1	0	1	14 $\frac{4}{16}$	110	62
—	0	0	0	0	0	0	0	0	1	14 $\frac{6}{16}$		121
—	0	1	1	0	0	1	1	1	1	14 $\frac{7}{16}$		63
—	0	—	—	—	—	—	1	1	1	14 $\frac{10}{16}$		19
0	0	1	1	0	0	1	1	1	1	15 $\frac{1}{16}$		67
0	0	1	1	0	0	0	1	1	1	15 $\frac{3}{16}$		69
—	0	0	0	0	0	0	0	1	1	15 $\frac{4}{16}$		20
—	0	1	1	0	0	0	0	0	1	15 $\frac{5}{16}$		21
—	0	1	0	0	0	0	1	1	1	15 $\frac{6}{16}$		77
—	0	1	1	0	0	1	1	1	1	15 $\frac{7}{16}$		126
—	0	1	1	0	0	0	1	1	1	15 $\frac{8}{16}$		127
—	0	1	1	0	0	1	1	1	1	15 $\frac{9}{16}$	258	25
0	1	1	1	—	1	1	1	1	1	16 $\frac{1}{16}$		27
—	0	1	1	—	—	—	—	—	1	16 $\frac{2}{16}$		28
—	0	1	1	—	—	—	—	—	—	16 $\frac{3}{16}$		129
—	0	—	—	—	—	—	—	—	—	16 $\frac{4}{16}$		131
—	0	1	1	—	—	1	1	1	1	16 $\frac{5}{16}$		74
—	1	1	1	0	0	0	0	1	1	17 $\frac{1}{16}$		81
—	1	1	1	0	0	1	1	1	1	17 $\frac{2}{16}$		133
—	1	1	1	0	0	1	1	1	1	17 $\frac{3}{16}$		82
—	1	1	1	1	1	1	1	1	1	17 $\frac{4}{16}$		84
—	1	1	1	0	0	1	1	1	1	17 $\frac{5}{16}$		85
0	—	—	—	—	—	1	1	1	1	17 $\frac{6}{16}$		31
—	1	1	1	0	0	0	0	1	1	17 $\frac{7}{16}$		86



TABLE V.—FEMALES—*continued*.

Culod.	Lower epiphysis of femur.	Astragalus.	Os calcis.	Sternum.						Length.	Age in days.	No.	
				Ensiform cartilage.	4th piece of gladiolus.	3rd piece.	2nd piece.	1st piece.	Manubrium				
—	1	1	1	0	1	1	1	1	1	17 $\frac{13}{16}$		137	
—	0	—	—	—	—	—	—	—	—	18		34	
0	1	1	1	0	0	0	1	1	1	18		35	
—	1	1	1	—	—	1	1	1	1	18 $\frac{1}{16}$		36	
—	1	1	1	0	0	1	1	1	1	18 $\frac{1}{16}$		89	
—	1	1	1	1	1	1	1	1	1	18 $\frac{1}{16}$		90	
0	1	1	1	0	0	0	1	1	1	19 $\frac{1}{16}$		43	
—	1	1	1	—	—	—	—	1	1	19 $\frac{1}{16}$		44	
—	1	—	—	—	—	—	1	1	1	19 $\frac{1}{16}$		45	
—	1	—	—	—	—	1	1	1	1	19 $\frac{1}{16}$		46	
—	1	—	—	—	—	—	—	—	—	19 $\frac{1}{16}$		92	
—	1	1	1	0	0	1	1	1	1	19 $\frac{1}{16}$		93	
—	1	—	—	—	—	—	—	—	—	20		150	
—	1	1	1	0	0	1	1	1	1	20 $\frac{1}{16}$		152	
—	1	1	1	0	0	1	1	1	1	20 $\frac{1}{16}$		155	
—	1	—	—	—	—	—	—	—	—	21 $\frac{1}{16}$		49	
—	1	1	1	0	0	0	1	1	1	23		158	
— signifies that no observation was made. 0 signifies that the observation was made, but that there was no centre.											876 $\frac{9}{16}$	16.23	54







TABLE V

[illegible]

SOME CASES  
OF THE  
RARER FORMS OF TUBERCULAR DISEASE  
OF THE KNEE-JOINT.

---

By HENRY BETHAM ROBINSON, M.S.LOND.

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CASES of tubercular disease of the knee-joint starting in the bone or of synovial origin, where there is generalised thickening of the membrane, are too common to require any particular notice here. A very different matter is it with respect to certain rare forms of synovial disease, in which, from their infrequent occurrence and from their scanty recognition, errors in diagnosis are not at all uncommon.

1. *Tubercular Hydrops.*

The first form for us to consider is the tubercular hydrops. Here we have an extensive effusion into the joint cavity, and very little, if any, appreciable thickening of the synovial membrane—it will be borne in mind that to have any quantity of fluid present in an ordinary case of synovial disease is rare. The effusion may remain for a very long time as the sole feature of the lesion; but usually, after a

while slight thickening occurs at the reflection of the membrane at the margin of the joint, forming soft villous-like processes, which overlap, and generally are attended by some atrophy of the subjacent articular cartilage. The ultimate outcome of these cases, if not remaining at this stage almost *in statu quo*, would be more implication of the synovial membrane, so that the distinctive anatomical features are lost, the condition becoming like the common form only with an excess of fluid.

From a diagnostic point of view the history here would guide. The outgrowths at the synovial reflection do not in this form get of any great size to form the pendulous growths which will be spoken of later. The effusion in the joint may vary in character from a thin, almost clear fluid to a thick, brown, viscid one. The solids in suspension are scanty, not causing more than slight turbidity, but if they—made up of leucocytes and the products of coagulation necrosis—are large in amount, the condition becomes that of a joint empyema.

König, whose name is especially associated with this form of disease, has examined these joints at an early stage, and states that there is a formation of a thin layer of tubercles on the surface of the synovial membrane, along with a slight amount of chronic inflammation.<sup>1</sup> Senn describes this under the name of Pannus Hyperplastic Synovitis.<sup>2</sup>

This form of hydrarthrosis is generally met with in children and young adults, and from the absence of any trauma, *i. e.* as an immediate antecedent, and from the chronicity, some constitutional cause is certainly suggested. There may be great difficulty in deciding between tubercle and congenital syphilis in some cases; in the latter, symmetry and eye lesions (interstitial keratitis, choroiditis) may confirm, but if both knees are affected in the former, as in Case 1 quoted below, additional difficulty is introduced.

It must be noticed that in these cases, chronic and innocent as these primary joint lesions may appear, tubercular manifestations elsewhere may be very active, showing marked tendency to caseation.

<sup>1</sup> Watson Cheyne, 'Brit. Med. Journ.,' December 6th, 1890.

<sup>2</sup> Senn, 'Principles of Surgery,' p. 509.



CASE 1.—M. S—, a female æt. 17, was admitted under my care at St. Thomas's Hospital, on May 4th, 1895. She was the younger of two children; the elder lived eighteen days. She was born after a very bad, tedious confinement, and was badly nourished from the first. The mother has fair health, but from time to time an ulcerated throat. She had had no miscarriages. The father, a sailor, was quite healthy; he is now dead, cause unknown.

*Previous history.*—Between the fifth and seventh months she had "something the matter with the brain," and her heels were drawn up to her head. There was no history of snuffles or rashes. When nine months old she had varicella, and at twelve months an abscess formed on the right side of the neck. At fifteen months the left knee was noticed to be a little swollen, and during the next two months it became drawn up (on inquiry there had been a doubtful injury to the knee at five months old). For this she was taken to the Evelina Hospital, and there was said to be pulpy disease of the knee-joint, which was put up in splints. Two years later the knee was much more swollen and soft, and has remained about the same ever since, without pain. The right knee was noticed to be swollen at about ten years old, and has kept the same.

Her feet and fingers have seemed enlarged at times, and been cold, and of a dark red colour. The eyes have always been weak. For twelve months there has been persistent diarrhœa quite independent of ingesta.

On admission she had a very pinched face and was emaciated, and appeared more like twelve years of age than seventeen; she seemed feeble intellectually. Eight weeks before admission a small lump had appeared over the upper border of second left costal cartilage, which had gradually increased in size, being now somewhat circular with a diameter of two inches; there was tenderness on firm pressure.

Both knee-joints are distended with fluid, but there is no osseous enlargement of either femora, tibiæ, or patellæ. At the margins of both joints along the inner condyle of the femur, small polypoid masses can be outlined with the finger. Both joints were flaccid, allowing of lateral movement, but yet she could walk well.

On the dorsum of the right hand between the distal ends of the second and third metacarpal bones was a ganglionic swelling about the size of a Barcelona nut.

Her teeth were very irregular ; the upper central incisors widely separated but not notched ; the canines were pegged.

The report on the condition of the eyes by Mr. Fisher was : " She has well-marked remains of interstitial keratitis in each eye with residual vessels ; in the right eye is a posterior synechia below, the result of iritis, and in each fundus there are extensive areas of choroido-retinal atrophy with retinal pigment disturbance, the remains of disseminated choroido-retinitis, which is seen both in the peripheral and central portions of the fundi. The whole trouble is undoubtedly due to congenital syphilis."

Temperature was normal.

On May 7th the abscess was opened by an incision below the second costal cartilage, and curdy pus was evacuated. The costo-chondral junction was found enlarged, and from the end of the rib was removed a small sequestrum. The wound was dressed with iodoform.

May 25th.—The temperature, which has been usually raised  $1^{\circ}$  at night, rose last night to  $101.4^{\circ}$ . This was to be explained by a return of the diarrhoea. The wound looks quite healthy, and is healing up rapidly.

29th.—Diarrhoea has been quite sharp for the last three days.

June 3rd.—Diarrhoea better. Wound progressing well.

8th.—Patient seems greatly improved. Superficially the wound has healed except at one spot ; here a probe passes inwards and upwards towards the back of the sternum ; no bare bone felt.

27th.—Wound considerably healed. Diarrhoea slightly again. The knees remain about the same size, the right measuring circumferentially  $13\frac{3}{4}$  inches, and the left  $12\frac{1}{2}$  inches.

July 8th.—The wound shows signs of breaking down, and the temperature has slight variations.

10th.—More diarrhoea yesterday, and at night the temperature rose to  $102.2^{\circ}$ .

15th.—Diarrhoea profuse. Wound healing slowly. The

knees remain the same ; the right is strapped with Scott's dressing and put on a splint.

August 29th.—Since the last note the wound has gradually healed up again so as to leave only a sinus about  $1\frac{1}{2}$  inches long. She has had no marked diarrhœa, and the temperature has varied very little.

30th.—Yesterday afternoon the right knee was aspirated from the outer side, and only about a couple of teaspoonfuls of a very thick viscid fluid were withdrawn with great difficulty. The margins of the joint were very irregular, and nodular, resembling much a rheumatic joint.

September 17th.—Since the aspiration the knee has remained quite stationary. For the last two days vomiting and diarrhœa have been present.

23rd.—A swelling, which had developed on the dorsum of the right hand, burst and discharged a thin fluid with flocculi in it. There is decidedly less fluid in the knees, and the patellæ now are prominent. The limbs are very wasted; the diarrhœa is almost continuous, and there is occasional vomiting.

October 3rd.—Diarrhœa continues, and there is marked emaciation. Still discharge from wounds over rib and dorsum of hand. Both knee-joints are almost free from fluid.

5th.—Diarrhœa a little improved with starch and opium enemata twice daily.

7th.—Temperature rose last night to  $101^{\circ}$ , but diarrhœa a little improved.

9th.—Some complaint of pain in right shoulder ; on examination a small fluctuating swelling is to be felt over long head of triceps just below axillary fold.

12th.—Complains still of pain in right arm, and swelling a little larger. Temperature has been a little higher and diarrhœa still bad.

18th.—Great pain in right shoulder, especially on movement. The sore on the hand is almost healed. She has developed a cough.

21st.—Slight fulness over the right masseter and some pain on opening mouth. Swelling at the back of the right shoulder larger.

26th.—The swelling over the masseter much increased, fluctuating and painful; opened, and rather curdy pus set free. Temperature only slightly raised.

November 1st.—Failing rapidly. Diarrhœa has come on again, and is constant. The emaciation is extreme, voice very feeble, and sordes on teeth.

3rd.—Died.

*Post-mortem examination* (by Dr. Seymour Toller).—The wound in the chest wall showed extensive caries of the second rib, the subjacent pleura was thickened, but not perforated. The right shoulder-joint was extensively diseased and disorganised; the joint was filled with inspissated curdy material; the head of the bone (the epiphysis) was separated from the shaft; the upper part of the diaphysis was concave, and fitting in this between it and the head was a somewhat circular sequestrum about the size of a chestnut, which was easily removed from its position with the fingers.

Both knee-joints had a little viscid fluid in them. At the margins of the joint surfaces, especially in relation with femora and on the inner side, there was general hyperplasia of the synovial fringes; these were tough and fibrous, and to the naked eye showed no tubercles. Where these fringes projected over the articular cartilage the latter was much thinned, apparently from the pressure. There was no sub-articular change to be detected.

*Heart and pericardium healthy.*

*Lungs.*—Extensive adhesions on the left side posteriorly, none on the right side; no fluid in the pleuræ.

The left lower lobe was solid throughout as the result of confluent broncho-pneumonia, tuberculous in origin; islets of caseation existed here and there, but no recent miliary tubercles were seen. The apex was excavated into a cavity with a smooth lining membrane and about the size of a chestnut, whilst the remainder of this lobe was healthy.

The right apex showed a cavity of the same proportions but with ulcerating and secreting wall; a certain amount of fibrosis surrounded it. No further disease on this side. *Bronchial glands caseous.*

The *retro-peritoneal* glands formed a lobulated tumour



two thirds size of a cocoa-nut; the individual glands were distinct from one another, but they had all completely broken down, and on section contained only a semi-solid pul-taceous material. No tubercle of peritoneum.

Gastro-intestinal tract showed congestion only. No tubercle.

*Liver*.—About the usual size; scattered throughout the substance of the organ were seven or eight caseous masses, each about the size of a Barcelona nut; one of them would abut on the surface, whilst another was deeply placed; they were evidently tuberculous in character. The parenchyma of the gland was apparently healthy.

*Kidneys* showed nothing abnormal.

*Spleen* enlarged; on section firm and homogeneous. The iodine test revealed most extensive lardaceous disease, which was of the "sago" variety, the Malpighian bodies being in the main involved.

No further disease.

*Remarks*.—Although in this case there was marked evidence of congenital syphilis if taken from the standpoint of the eyes alone, the majority of the lesions were undoubtedly tuberculous. The condition of the knees, the diagnosis of which was a matter of dispute for some time, suggested rather some abnormal form of syphilitic joint from the symmetry and from the age at which the lesion was present. Over-ruling these facts were, however, others far weightier. Liberal administration of iodide of potassium had produced no effect, and the joints themselves did not resemble any (as at present known) syphilitic lesion. The history also pointed to tubercle more than syphilis.

The tubercular disease of the liver and the tubercular epiphysitis at the upper end of the humerus and at the costo-chondral junction of the second rib are worth noting.

Experience at a children's hospital teaches that this combination of tubercle and syphilis is not at all an uncommon thing; and with many of the effects produced, such as enlarged glands, &c., it is very difficult to say which plays the chief part. One thing I am certain of is that the lesions are often much more severe where there is the dual infection.

CASE 2.—William G—, æt. 12, was brought to me at the Children's Hospital, Shadwell, on December 10th, 1895. There was very marked swelling of the right knee, due chiefly to fluid effusion; the synovial membrane generally was a little thickened, and at the line of reflection small polypoid masses could be felt. In circumference, this knee exceeded its fellow by two and a half inches. This swelling of the knee had existed for four years. Before that the boy had had scarlet fever, and afterwards complained of pain in the knee, and swelling was soon noticed. The knee had varied in size after walking, but when first seen it had attained its maximum size. The glands along the saphena vein and by the side of the iliac vessels on the right side were very large, and the iliac glands felt very elastic, as if softening were commencing. The boy himself seemed robust and fairly healthy. He had no cough or other evidence of chest trouble; there was a sound family history. He was given cod-liver oil and iron and quinine, and the knee was strapped with Scott's dressing and put up in plaster of Paris.

December 17th.—Knee said to feel better, but a little larger. He showed to-day a very definite patch of warty lupus on the left elbow, which had been present for three years and had remained in the same condition.

January 7th, 1896.—Not so much fluid. Some tenderness about the synovial fringes.

21st.—Increase in size of half an inch.

March 31st.—Very much better, all the fluid having been absorbed; synovial fringes very definitely felt; no pain. Ordered a leather splint.

From this time on he has remained in the same condition; the enlarged glands have not softened, and are a little smaller.

There is no special comment to make on this case except to draw attention to the marked glandular enlargement. If this had not been the condition I would certainly have urged an arthrectomy to remove the diseased synovial membrane.

CASE 3.—Aaron F—, æt. 17, was admitted into St. Thomas's Hospital, in December, 1889. He had always

been strong and well, but there was a family history of tubercle. Two and a half years before he first noticed the right knee swollen, which had come suddenly without any injury. He had no pain in it, and had been able to work. Two weeks before the knee became rather painful, especially at night, but there was no starting.

On examination there was no heat or tenderness of the joint, and the movements were good. There was great distension with fluid. The synovial membrane could be felt slightly thickened, but on the inner side of the joint at the reflection were a number of small nodules, rather moveable. No other joint was affected, and there was no phthisis.

Mr. Sydney Jones, whose patient he was, kindly asked me to operate on the case; so on January 9th arthrectomy was done. The general synovial membrane was very little thickened, and the bones and cartilages healthy; the ligaments were not involved. There were the villous nodules as before felt, but they were quite soft. The fluid was clear, brown, and viscid.

He made a good recovery.

## *2. Pendulous Bodies from the Synovial Membrane.*

The second form I would draw attention to is where pendulous growths project from the membrane into the joint cavity. There may be only one single mass present, simulating a pedunculated cartilage, or they may be multiple. At first the synovial membrane is not generally involved, but later the tubercular mass or masses may be associated with small villous processes at the joint margin as well as with thickening of the membrane itself: when this is the condition, no great differentiation can be made from the last heading except from the size of the growths. The quantity of synovial fluid varies, but it is usually profuse. This form of tubercular disease has been especially associated with König's name. Riedel has also described them as follows:—"The synovial membrane is reddened, often thickened, and shows one or more prominences on the surface; the joint frequently contains fluid and rice-like bodies; the

nodules contain numerous tubercles, often closely packed together.”<sup>1</sup>

Of a single pedunculated tuberculous mass the writer has only seen one example, but unfortunately the notes were not forthcoming for inclusion in the paper.

CASE 4.—The following is a good example of multiple pedunculated growths, the case being under the care of Mr. Sydney Jones, and to him I am indebted for being allowed to publish it.

E. W—, a girl æt. 20, was admitted into St. Thomas's Hospital, November 20th, 1888. Two years before she had had a laparotomy, apparently for some tubercular disease of pelvic viscera. Some time afterwards she first noticed something amiss with the left knee. She complained of sharp momentary pain in the knee on movement, followed by swelling; after this she had several such attacks. The pain is chiefly in trying to extend the knee-joint after flexion, and is worse in going down than up stairs; it makes her feel faint and sick.

On examination the left knee was distended with fluid. On the outer side of the patella was a smooth, hard, flattened body, about the size of a florin, attached to the synovial membrane; this seemed to dip under the patella. On the inner side was a pea-like body, also pedunculated. The synovial membrane generally felt a little thickened. Nearly three months' treatment with rest, Scott's dressing and plaster splint proved unavailing, so on February 6th, 1889, the joint was explored. A transverse incision was made through the patella, and the joint cavity well exposed. The whole synovial membrane was thickened and gelatinous, with the two pedunculated masses as before mentioned. The cartilaginous surfaces of the tibia and femur appeared quite healthy except just at the margins, where the synovial membrane was creeping over; here the cartilage was much thinned. The gelatinous tissue wrapped over the edges of the fibro-cartilages and surrounded the crucial ligaments, but these structures were not infiltrated and the diseased membrane could be easily dissected off them. The whole of the dis-

<sup>1</sup> Watson Cheyne, 'Brit. Med. Journ.,' Dec. 6th, 1890.



eased synovial membrane was removed with scissors. The nodules on section showed well-marked caseous centres, and on microscopical examination this softened area was surrounded by typical tubercular tissue, but no bacilli were detected.



THE DISPLACEMENTS  
WHICH OCCUR AFTER  
TUBERCULOUS DISEASE OF THE KNEE-  
JOINT IN CHILDREN.

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By T. H. KELLOCK.

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STATISTICS and experience alike go to prove that in point of frequency amongst children and young adults, tuberculous disease of the knee-joint comes next to and follows closely upon that of the hip, and although it may be true that there are more cases of this disease of the knee that recover with a satisfactory result than is the case with the hip, yet if this be bad the subsequent deformity and interference with locomotion are equally great and serious in the case of the knee; a patient who has to earn his living by labour will be just as badly off with an unsatisfactory result as regards position after disease of the knee, as after that in the hip, for in the latter the increased mobility which use brings about in the joints of the spine, does more to compensate for the displacement and ankylosis than anything can do in the case of the knee.

The severity of this handicap to a labouring man will be most evident to anyone who watches an adult who in early

life has been the subject of neglected disease of the knee-joint, which has gone on to the "triple displacement," and sees such a man getting about, walking on the metatarso-phalangeal joints and toes, instead of on the sole of his foot, with his knee so flexed that he has to bend the opposite joint in order to bring the foot of the affected side to the ground at all, the leg so displaced and rotated outwards that the knee is pressed in walking against the opposite leg, and the head of the tibia so slipped back on the femur that he cannot with confidence bear the weight of his body on the limb; and when it is considered that every step this man takes, and every ounce of weight that is brought to bear on the top of his femur, to be transmitted to the ground, tend to increase each element of this displacement, it is obvious that we ought to use every endeavour that no case of tuberculous disease of the knee-joint in children that comes under our care should leave our hands until we are sure that the result as regards displacement is a satisfactory one.

As is well known, the so-called "triple displacement" consists of flexion of the leg on the thigh, displacement backwards of the head of the tibia, and rotation outwards of the leg on its long axis with abduction of the foot, and the only conditions necessary for the possibility of its occurrence are that the crucial and lateral ligaments and the stronger parts of the capsule of the knee should be destroyed, or so weakened that they are capable of stretching, and this weakening or destruction of ligaments takes place either as the result of disease or operation, so that we find the displacement occurring both in cases which have been operated upon and those that have not; in the latter whether it can occur or no is only a question of the extent to which the disease has affected these structures.

That these displacements cannot occur in a healthy joint is due almost entirely to the ligaments (crucial, capsular, lateral), but when these are rendered more or less functionless by disease or operation, it is to the muscles that we must look for the agents which produce the displacements, for under these circumstances the flexor muscles of the knee become retractors of the leg on the thigh as well as flexors, and the external rotators become also abductors of the leg



on the thigh, and as will be seen hereafter, the adductor muscles of the thigh can under certain conditions aid in causing external rotation and abduction of the leg, by exercising their influence as adductors and internal rotators of the thigh. As far as muscles are concerned, the quadriceps extensor is the only one capable of opposing flexion of the knee, and although this is a very powerful muscle, its attachment to the tibia being so near the upper extremity of this bone accounts for the fact that its value as a *powerful* extensor of the leg is much less than its value as a rapid one; in other words, its action is so arranged that the velocity it can impart to the leg and foot is better served than the power which it can so impart.

Moreover, from the arrangement of its attachment to the tibia with the lower end of the femur, guarded by the patella, acting as a pulley the angle which the tendo patellæ makes with the long axis of the tibia is greatest when the leg is fully extended on the thigh, and as flexion increases this angle diminishes, and so it is that the greater the flexion of the leg at the knee, the less is the power of this muscle to start extension, and the greater that part of its power which is expended in the long axis of the tibia; once, however, extension is started this muscle acts with increasing advantage until the leg is completely extended. When, on the other hand, we consider in the same way the action of the flexors of the leg, we find that the reverse holds, and that the greater the flexion, the greater is the angle at which their tendons join the leg, and thus the greater the power they have in maintaining flexion, and this is true both of the flexors which come from above the hip, and of the gastrocnemius, which is a flexor of the knee when the ankle is fixed. To put this in other words, as extension becomes flexion, the component of the extensor force which acts at right angles to the leg diminishes, whilst the component of the flexor force in the same direction increases, so that once flexion has commenced the muscular forces will tend to increase it, and produce backward displacement of the tibia if this is possible.

Similarly, when once external rotation of the leg has commenced, the biceps, which is the chief muscle concerned in

producing this movement, will act at an increasing advantage as the angle which its tendon makes with the long axis of the leg increases with external rotation, at the same time the sartorius, semi-tendinosus, gracilis, and semi-membranosus tend more and more to act in the direction of its long axis, and so the tendency will be for the muscular forces to maintain and increase external rotation and produce displacement outwards if this is possible. The fact that directly there is any inflammation in or about the knee-joint, it is instinctively placed in a position of slight flexion, and that in lying or sitting the leg is kept in a position of slight external rotation, which the weight of the foot tends to increase, will in most cases be sufficient to account for the commencement of the position of flexion and external rotation, and should the disease in the joint progress so as to bring about those morbid conditions which allow of abnormal movements taking place, it is evident from what has been said that there are sufficient forces at work to produce the triple displacement, to what may be, if steps are not taken to prevent it, a very serious extent.

The question as to how this displacement may be prevented reduces itself for practical purposes to this. How can the knee-joint be fixed and maintained in the perfectly straight position? We have not here to consider those cases where flexion and slight external rotation only are present in a slightly diseased joint, for in such we can hope for recovery with a moveable joint, and the fixation of the knee in a straight position is not a very important matter; but we are concerned with those cases where by disease or operation the conditions are so altered that abnormal movements can occur, and in such recovery with a moveable joint is out of the question, and the best that can be hoped for and expected is ankylosis of the femur and tibia in the perfectly straight position. What we have to deal with then is practically a fracture in the centre of the shaft of a long bone extending from the hip to the ankle—a fracture, moreover, attended by many difficulties in the way of treatment, for in the first place the ends of the bones are not in a healthy condition and may also be still partly covered with cartilage, and secondly there is a difficulty which we

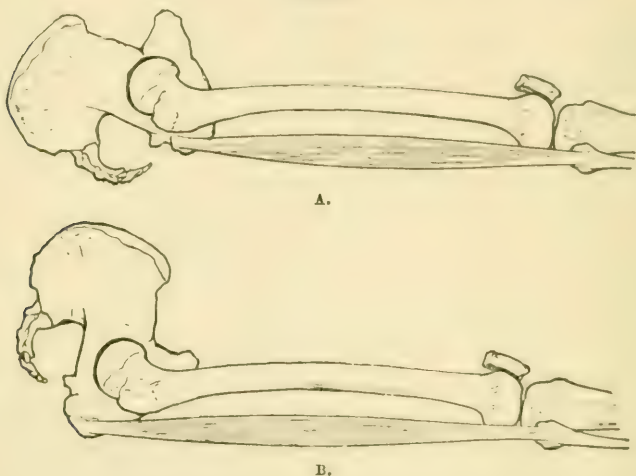
have not as a rule to contend with in ordinary fractures, namely, a circle of attachments of powerful muscles immediately above and below the seat of fracture, an exaggerated case of one of the conditions generally described as a cause of non-union in ordinary fractures, namely the insertion of strong muscles close to the seat of fracture. This condition ought, then, to be treated in the same way and even more carefully and for a greater length of time, on account of the unfavorable condition of the ends of the bones, as a fracture at the lower end of the femur, and yet how rarely is this done; many a surgeon who would stand aghast at the sight of one of his patients who had fractured the femur just above the condyles, sitting up in bed a fortnight or three weeks after the accident, will view with equanimity a child whose knee-joint has been extensively erased, or is severely diseased, sitting up and playing with toys on a bed board after a similar period.

Most works on surgery in describing the operations for tuberculous disease of the knee-joint direct that after the operation the knee should be fixed on a splint or encased in plaster of Paris or leather extending from the groin to and including the foot, some adding that the patient should be kept in the recumbent position. But a little consideration will show very clearly that if displacement of the knee is to be prevented it is absolutely necessary that the hip-joint should be included in this fixation, for where the thigh and leg are fixed but the hip left free we have all those powerful muscles which arising above the hip pass to the thigh and leg, left free to act; thus with every effort to raise himself the patient will put into action the ilio-psoas, which will tend to displace the lower end of the femur forwards, the adductor muscles will help displacement inwards and rotation in the same direction, whilst the hamstring muscles pull the leg backwards on the lower end of the femur and no apparatus can be fixed tightly enough to the knee itself to keep this in position against these forces. The quadriceps extensor, which under these conditions might tend to keep the leg extended, is differently placed to the other muscles, for with the exception of the tendons of the rectus all its powerful elements arise from the shaft of the femur,



and so by the ordinary methods both its insertion and origins (with the exceptions noted) are fixed ; moreover, when such patients are allowed to sit up, as they often are, before the union of the ends of the bones is firm, with the knee encased in leather or plaster of Paris, as will be seen from the accompanying diagrams (Fig. 1), the hamstring muscles

FIG. 1.



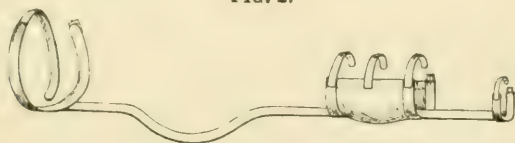
become very powerful levers to produce backward displacement of the leg on the thigh (if this has once commenced), even without their active contraction ; as the patient rises from the recumbent to the sitting position, the os innominatum with the origins of the flexor muscles changes its position from that seen in A to that in B, and the drag thus exerted tends to the displacement backwards of the leg.

Those who have had experience will realise how practically impossible it is to keep the hip-joint of a child in a position of absolute rest merely by keeping him recumbent ; every time he is washed, every time he shifts his position in bed, every time his bowels act, and at numerous other times, this rest will be disturbed, and when it is considered that if the foot and leg are fixed, every movement of the trunk on the thigh is relatively greater than when these are free to move with it, it will be seen that it is only by mechanical means that the pelvis and hip-joint can really be fixed.



To absolutely fix the hip-joint for a considerable period is always a difficult matter; a plaster-of-Paris or leather girdle round the pelvis and extending down the thigh, combined with a straight outside splint reaching from the axilla to beyond the foot, as is often used for fracture of the femur, is perhaps the most effective, but it has the disadvantage of covering up a large portion of the body which has to be, especially in the case of a child, washed and watched for the appearance of rubbing, sores, &c., and if it has to be removed for these purposes, the taking off and putting on again must entail a considerable amount of movement. On the whole, the apparatus which appears to answer best, and to have the fewest disadvantages, is a Thomas's hip splint, which may for the cases in question be improved by the addition of an extra crutch, as seen in Fig. 2, the two crutches being joined at their extremities

FIG. 2.



by thin pieces of flat iron and the surface between them covered with leather, making a kind of gutter in which the knee rests and in which it can be firmly kept by straps, bandages, or plaster of Paris; this splint can, if thought necessary, be continued to the foot and a foot-piece added.

The modification (Cróft's) of Thomas's hip splint in which the longitudinal bar runs down the outside of the leg instead of posteriorly, relieves the patient of the necessity of always lying on it, but, like the ordinary straight outside splint, has the disadvantage that when the patient moves or is moved it allows the buttocks to fall back a little and so permits of some, though slight, movement at the hip.

Into such a splint as that figured above a child can be placed immediately after an operation on the knee, with the latter fixed firmly into the "gutter," and in this he should remain until such time as ankylosis is complete, and he can

be allowed to put his foot to the ground and bear some weight on it ; he can, of course, as convalescence progresses, get about with crutches and a patten on the other foot, and be treated in very much the same way as if he had disease of the hip-joint.

All those splints, be they made of wood, iron, leather, or plaster of Paris, which only include part of the thigh, the knee, and part of the leg, and are so often used in the convalescent stages, are of no more use in preventing displacements of the knee where from want of proper union of the bones these can take place, than a similar splint applied from above the knee to below the hip could prevent displacement in a fracture in the middle of the shaft of the femur that was not properly united, and in this same category we must include—for use in cases of the nature of those we are considering—Thomas's knee splint, which may be and often is most useful in cases where it is desired merely to take the weight of the body off a knee which is temporarily incapable of bearing such weight, and where it is desired to let the patient get about on crutches ; but where the prevention of displacement is aimed at it should not be used, for it allows of free movement at the hip, and from the fact that the leg and thigh are, as it were, slung from the top of the splint, there is nothing to offer much resistance to the action of those muscles which, coming from above the hip, tend to displace the leg backwards and outwards on the thigh.

Thomas's knee splints, moreover, are very commonly used too short ; by leaning over to the affected side and extending the foot at the ankle to the utmost, whilst keeping the latter rigidly fixed, the patient can just reach the ground with the ball of the great toe, and whatever weight he so rests must have a great influence in increasing all the displacements at the knee, and very often, even in those patients who do not appear to do this, there will be found in the wearing away at that spot of the boot, or whatever is worn on the foot, silent evidence that it takes place when they are not under immediate observation.

In considering what is the best means of treating these displacements when they have occurred, we must again make a distinction between those cases where they have not gone

beyond what is possible in a normal joint, and those in which disease or operation have rendered abnormal displacements possible; for the former can with safety be treated by fixing the joint in its slightly flexed and rotated position, and relying on the local rest so obtained, and general constitutional remedies to bring about a cure of the disease and leave what may eventually prove to be a moveable joint, which will in time return to its normal condition. In the latter, however, if we are to have eventually a straight limb, means will have to be adopted at some time to remedy the displacements, and as no improvement is likely to take place by waiting, and after a time the muscles and ligaments become organically shorter in their new position, and so form serious obstacles to bringing the leg into a good position, the sooner this is carried out the better.

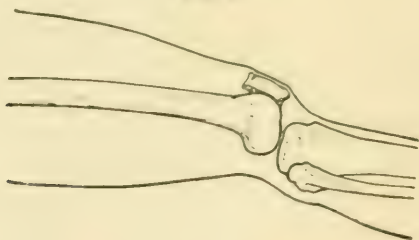
For those cases where, although the displacement is considerable, no firm ankylosis has taken place between the ends of the bones, and movement is still possible, it is generally recommended that weight extension be employed in the long axis of the leg, with the idea of drawing the bones apart at the joint, and then by gradually raising the weight to bring the leg into a straight line with the thigh; but this extension entails keeping the thigh flexed at the hip, and so keeping the hamstring muscles stretched. Theoretically, to be complete, this extension in the long axis of the leg should be accompanied by another attached to the upper end of the leg and acting in the line of the flexor muscles of the knee, so as to draw the *head* of the tibia forwards on the femur when the other weight shall have sufficiently separated the bones; if this is not done, when the weight on the leg is gradually raised to bring it straight this will be accomplished by the head of the tibia rotating on its own transverse axis instead of on the transverse axis of the lower end of the femur, and the result will be that the leg will be straightened in a plane posterior to that of the thigh with the head of the tibia partially or wholly displaced backwards (Fig. 3).

A better plan would appear to be to manipulate the limb into the straight position with the patient anæsthetised; we have then the advantage of the muscles being flaccid, and



should it be found necessary the tendons of those muscles which most oppose reduction can be divided ; very great care has to be taken, however, in the performance of this operation, that the force used is applied in the proper place and in the proper direction—merely to straighten the limb by fixing the thigh and extending the leg will only bring

FIG. 3.



about the result shown above (Fig. 3), or else a fracture at the upper part of the tibia, or even at the lower end of the femur if the connection between the two bones is at all firm, and they themselves weakened by disease,—extension should be made in the long axis of the leg with very gradual extension of the leg at the knee, at the same time the head of the tibia must be made to *move* forwards on the condyles of the femur by pressure from behind, and not allowed merely to rotate on its own transverse axis, and during the operation the thigh should be kept extended so as to render the hamstring muscles (if their tendons are not divided) as relaxed as possible.

With regard to the subcutaneous division of the hamstring tendons in these cases, and also when done during the operation of erosion or excision of the knee or when removing a wedge-shaped piece of bone (*vide infra*) for ankylosis in a faulty position, it is doubtful whether the ultimate benefit is as great as it promises to be at the time of performance ; the tendons reunite, and in doing so, when the new tissue between the cut ends contracts, must exercise a good deal of traction in just that direction in which we wish to avoid it. It is possible that in all these cases the removal of a piece of the tendons or the adoption of some other means by which the proximal cut ends might be prevented from



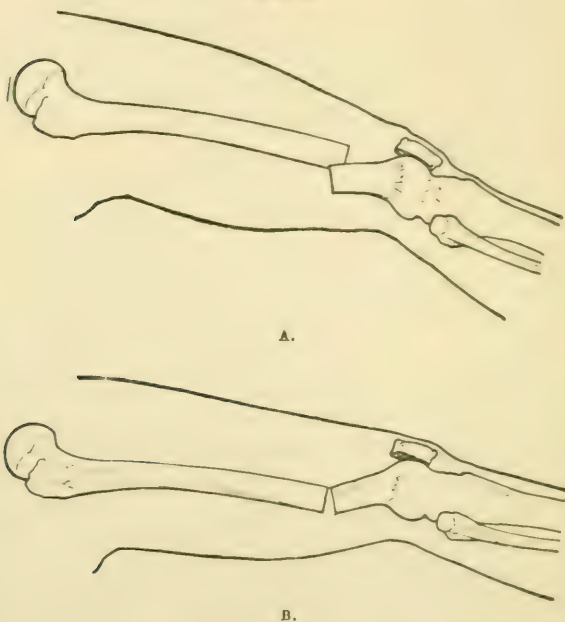
again forming attachments *below* the knee-joint might be of service.

It remains now only to consider the best course to be taken in those cases where ankylosis has occurred between the ends of the femur and tibia, and where the deformity is enough to call for operative measures for its relief, and in considering this latter point it should always be borne in mind that this union between the bones, whether it occur after disease only or after operation—and especially the former—is for a considerable time a very weak one, and that consequently, if steps are not taken to prevent it, the deformity will go on and increase, although on manipulation the union may appear to be quite firm.

Having decided upon operation, the choice, generally speaking, lies between two procedures, namely, the excision of a wedge of bone from the ankylosed ends of the tibia and femur, or an osteotomy of the shaft of the femur at its lower part, and both of these plans have their advocates; the former, however, seems preferable, because although in performing it the bones are divided at what was the site of the disease, and so the risk run of starting this afresh, or what is more serious, of setting alight a disseminated tuberculosis which may fix upon some more vital part for its development, yet experience would show that this risk is not a very great one, and it must be less when the disease is quiescent—if it be not altogether absent—than it is in every case where an operation is performed on any tuberculous joint in an active condition; the deformity, too, can undoubtedly be remedied much more effectually than it can by the latter plan, for if the femur be divided above the joint and the leg brought into proper position with the flexion and external rotation of the leg and the abduction of the foot all corrected, the condition of the ends of the bone at the seat of osteotomy must be either that represented in Fig. 4 A, where the upper end of the lower fragment is displaced behind and to the outer side of the lower end of the upper fragment, or what more probably occurs, that represented in Fig. 4 B, where the lower fragment by means of muscular attachments common to both fragments, and by the periosteum, if this be not completely divided, has carried the lower end of the upper fragment

back with it into its new position. Whichever of these two conditions occurs there is a great tendency, and one that is very difficult to counteract, for the femur as the union becomes solid to revert to its former state ; it is not an uncommon experience on examining a patient some time after an osteotomy has been performed on the lower end of the

FIG. 4.



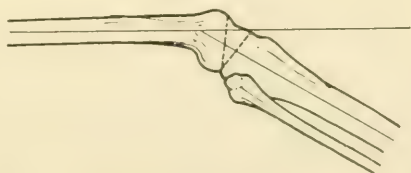
femur, either in such cases as those under consideration, or in cases of rickety deformities, to find the line of the bone unbroken, and the deformity in it that was produced by the operation smoothed away ; it would appear that in bringing about repair, nature uses the forces at her disposal to as completely as possible remedy the damage, and bring the bone back to its normal condition. This return to a straight position after displacement seems to occur more readily after osteotomy than after an ordinary fracture, which may be due partly to the more even surfaces of the ends of the bones in the former lending themselves more readily to mutual adaptation than the jagged ends in a fracture, and

it may be due partly to the age of the patients for whom these operations are generally performed, the tissues of the child or young adult being more active in this respect than those of older patients ; be this as it may, the fact remains that there is a great tendency for the deformity at the knee to return some time after an osteotomy of the femur has apparently remedied it.

Another objection to osteotomy of the femur for this condition is the fact that the *backward* displacement of the tibia on the femur cannot be remedied by it, so that even if the result be good in other respects, when the patient begins to walk he will only have the anterior part of the head of the tibia on which to bear his weight.

There are few operations in surgery that can be carried out with more mechanical accuracy than that of correcting displacements of the knee by excision of a wedge of bone ; a glance at Fig. 5 will suffice to show that to obtain a satis-

FIG. 5.



factory result two conditions must be complied with, namely (1) the incisions in the bone must be carried right through to the posterior aspect, and (2) the angle of the wedge removed must be the same as that which the leg makes with the long axis of the femur produced ; for if (1) be not complied with and the bone not completely divided, when the leg is extended the foot will move in a circle whose centre is the anterior end of the undivided portion, which will then fracture and throw a dangerous strain upon the structures immediately behind the joint, and only the sawn parts of the bones will be brought into contact ; whilst compliance with the second condition is essential if the leg is to be brought into an absolutely straight position. The wedge must also be cut so much thicker on the inner aspect than on the outer as will remedy the outward displacement of the leg.

It may or may not be found necessary to divide the tendons of the hamstring muscles, or to remove portions of them as suggested above, before the leg can be brought straight ; what is necessary is that after this has been accomplished, and whether the bones be united by mechanical means (pegs, wire, &c.) or no, the leg, thigh, and pelvis be immovably fixed in the extended position, and kept so until bony union is complete and firm, or there will soon be a recurrence of the deformity which the operation was undertaken to remedy.



# ON THE OCCURRENCE OF RELAPSE IN THE SPECIFIC FEVERS.<sup>1</sup>

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It is by no means uncommon for the convalescent stage of some of the specific febrile diseases to be interrupted by the occurrence of a definite relapse.

That persons suffering from enteric fever were liable to undergo a relapse was recognised more than sixty years ago, long before the distinction between typhus and enteric fever was fully understood.

During the last century, and the early years of the present one, the occurrence of a relapse had been frequently noted in many of the cases comprising the various outbreaks of what was universally regarded as typhus fever, and it was not until the year 1826, in the course of a severe typhus epidemic which was raging in Dublin, that these relapsing cases were recognised as instances of an entirely separate disease, quite distinct from typhus, though prevalent with it. The disease received the name of relapsing fever in consequence of this very feature.

Since the distinction between typhus and relapsing fever

<sup>1</sup> Read before the Medical and Physical Society of St. Thomas's Hospital, November 12th, 1896.

has been clearly recognised, practically no cases of typhus have been recorded which have been followed by a relapse; indeed, Murchison, whose extensive experience of typhus fever carries more weight than that of any other comparatively recent observer, states that out of 18,268 cases of typhus reported at the London Fever Hospital during twenty-three years, only one case occurred which was attended with a true relapse. It is obvious, then, that the experience to be derived from typhus fever can have but little bearing on the subject with which we are concerned this evening.

With the object of arriving at some conclusion as to the relative frequency of relapse in different diseases, an examination of the Statistical Report of the Hospitals of the Metropolitan Asylums Board for the year 1895 shows that in respect to those diseases which are normally received into the hospitals for the purpose of isolation and treatment—

In	650 cases of enteric fever, relapse occurred in 64; i. e. 9.8 per cent.
„ 4,131	„ diphtheria, „ „ 49 „ 1.1 „
„ 14,003	„ scarlet fever, „ „ 80 „ .53 „
„ 941	„ smallpox, „ „ 0
„ 3	„ typhus, „ „ 0

Of those diseases which are not properly admissible into the hospitals, but which are prone to arise subsequent to admission, viz. chicken-pox, whooping-cough, measles, r  theln, and mumps, the numbers are not sufficient to be of any statistical value, but I hope to briefly allude to them later.

In speaking of relapse, I refer not to the reappearance of any one particular symptom merely, such as the rash or the sore throat in a case of scarlet fever, an irregular rise of temperature or a return of diarrh  a in a case of enteric, but to a development in which the clinical signs of the disease become sufficiently pronounced as to enable one to form a diagnosis, a condition which is really deserving of the name “relapse” or “recrudescence” of the disease, as it is sometimes called.

There can be no doubt that, in respect to the bacterial diseases, whether of the toxic or of the septic variety, the phenomena of relapse are due to the recurrence of the same morbid process as was concerned in producing the original

disorder, and there is nothing, either in its clinical aspect or in its assumed pathology, to distinguish a relapse from a recognised second attack, except in respect to its early appearance; a distinction, then, which can only be relative.

### *Enteric Fever.*

In the case of enteric fever the liability to relapse varies both in different outbreaks and in different families. The percentage incidence amongst the 650 attacks treated in the Asylums Board hospitals during last year, to which I have alluded, viz. 9·8, is a fairly average one.

Murchison states that amongst 2591 cases treated in the London Fever Hospital during the years 1862—1868 a relapse occurred in 3·1 per cent. Griesinger noted them in 6 per cent. amongst 463 cases treated at Zurich; Human in 8 per cent. amongst 548 cases treated at Leipzig; MacLagan in 10 per cent. of 128 cases occurring at Dundee; and Goodall and Washbourn report an incidence of 13 per cent. amongst 506 cases treated in the Eastern Fever Hospital in the years 1892—1894.

The following case illustrates an ordinary attack of enteric fever in which convalescence was interrupted by the appearance of a typical relapse.

F. T—, æt. 23, was admitted into the South-Western Hospital with enteric fever on October 10th, 1895. His illness commenced on September 30th with headache and general malaise. Four days later he took to his bed. He was, therefore, admitted on the eleventh day of his attack.

*State on admission.*—Patient looks ill, face pale, expression apathetic; tongue dry and brown. Lips and teeth covered with sordes. Abdomen prominent and tumid. Several rose spots. Slight general tenderness on palpation. Spleen not felt. Is decidedly deaf. Has a troublesome cough. Temp. 104°; pulse 90, full and soft.

For a fortnight after admission patient was very ill; delirious, especially at night; frequent diarrhœa, controlled by starch and opium enemata; persistent cough (on auscultation there was general bronchitis); a temperature which

ranged between  $103.5^{\circ}$  and  $101.5^{\circ}$ , and a pulse which gradually rose from 90 to 120. During the last three days of this period he lost control of both bladder and rectum. His pulse became very dicrotic, and muscular tremors very marked.

On twenty-fifth day of illness his temperature became more markedly remittent, and his general condition showed signs of improvement. The remissions gradually became converted into intermissions, while at the same time his tongue cleaned. Delirium ceased, diarrhœa diminished, and appetite returned. By the end of the thirty-third day of illness his temperature had ceased to rise above normal. For nine days it remained at or below this point. On the forty-second day of illness the temperature began to rise again, and continued to do so during the next three days, at the end of which time it had reached  $104.2^{\circ}$ . This fresh rise of temperature was accompanied by a slight headache and re-furring of the tongue, the abdomen at the same time becoming full and tumid.

On the fourth day of the relapse three typical rose spots appeared, and two days later the spleen was obvious on palpation. The bowels became loose, but were not opened more often than three times in the twenty-four hours. For the next ten days the temperature oscillated between  $103^{\circ}$  and  $101^{\circ}$ , and the pulse between 110 and 100. At no time during this period was the patient delirious, nor did he exhibit any marked signs of prostration; while his tongue, though furred, remained moist.

On the fourteenth day of the relapse the morning temperature was only  $99^{\circ}$ . Four days later, both morning and evening temperatures were normal. The relapse thus lasted for seventeen days.

In the very large proportion of attacks but one relapse occurs; in exceptional cases, however, as recorded by Stewart and Trousseau nearly fifty years ago, a second relapse is noted. The same observation was made by Wunderlich and by Murchison, who reports two cases. In the course of the last twelve years I have met with two instances in which a typical second relapse occurred, and in each case the whole duration of illness extended over a



period of more than three months. Although instances characterised by *two definite* relapses—that is to say, three attacks, are extremely rare, it is not uncommon for the period of convalescence, even after the occurrence of one definite relapse, to be interrupted by one or more short pyrexial exacerbations of an irregular character, unaccompanied by the appearance of any noticeable complication. But in these cases the symptoms are not sufficiently pronounced to warrant the designation “relapse.” Such a development is often ascribed to the effect of constipation.

Murchison believed that males were more subject to relapse than females. In his experience the attacks were in the proportion of 3 to 2 respectively. This opinion, however, is by no means universal,—so much so that Griesinger, as the result of his own experience, held the opposite view.

Age seems to have no marked influence in determining the chance of relapse. My own feeling is that relapse is less common in children than in adults; but so is an attack of enteric fever itself, and consequently a deduction of any value can only be drawn from an examination of a very large number of cases.

The average duration of a relapse is less than that of the primary attack, and the same thing may be asserted of its severity. All observers who have had an extensive experience of enteric fever are agreed upon these points, and deaths in relapse are comparatively infrequent.

As a rule—and as to the truth of this I have very little doubt—the severity of the relapse and of the primary attack are in inverse proportion; but none the less the statement holds good, that the average severity of the relapse is less than that of the primary attack.

In connection with this fact the following observations should be noted. The temperature in relapse may reach the same height, the pulse may be equally rapid, the diarrhœa may be as profuse, and the eruption as copious, the splenic enlargement may return, and the emaciation proceed; but with the above-mentioned objective appearances the analogy ends. The patient does not feel so ill; he is less affected by his high temperature; the subjective signs, *viz.* headache, delirium, pain, are frequently absent, and the

patient may retain his appetite unimpaired with a moist, or at most a moderately coated tongue. Muscular tremor is usually but little marked, and there is often no obvious increase of prostration. Moreover the graver complications of enteric are less prone to occur, viz. perforation, hæmorrhage, tympanites, and pulmonary congestion. What wonder, then, that the enteric patient is less likely to succumb in relapse than he is during the earlier stage of his illness?

The temperature in relapse usually reaches its highest point on the third or fourth day, and the eruption commonly appears earlier than it does on the average in a primary attack. In most cases spots are seen to appear on the third, fourth, or fifth day, and but very rarely after the seventh.

The apyrexial interval which separates the primary attack from the relapse is frequently between seven and ten days in duration. In a good many attacks there is no apyrexial stage at all; but in most of such this appears to be owing to the prolongation of that irregular pyrexia which so frequently characterises the stage when the temperature has fallen to such an extent as to have become intermittent, the morning records being normal.

This continuance of the pyrexia in a half-hearted sort of way is supposed to be due to the absorption of septic material at the surfaces of the healing intestinal ulcers, and if it be unduly prolonged, the recrudescence of temperature, which serves to indicate the relapse, becomes superimposed upon that which denotes the septic termination of a primary attack. In this case there will be no interval of apyrexia, and the first indication of the development of a relapse will be afforded by a gradual resumption by the temperature of the enteric character. As the temperature rises day by day it becomes attended with the signs of more or less abdominal affection, and very probably a fresh crop of spots.

In some cases, on the other hand, the apyrexial interval is very much longer; indeed, I have met with one case, the patient being a young woman, in whom the relapse did not appear until the sixth week of convalescence.

Murchison, in fifty-three cases of relapse which came under his own observation, found the average length of the

CHART I.—Enteric Fever; relapse thirty-fourth day (interval ten days).

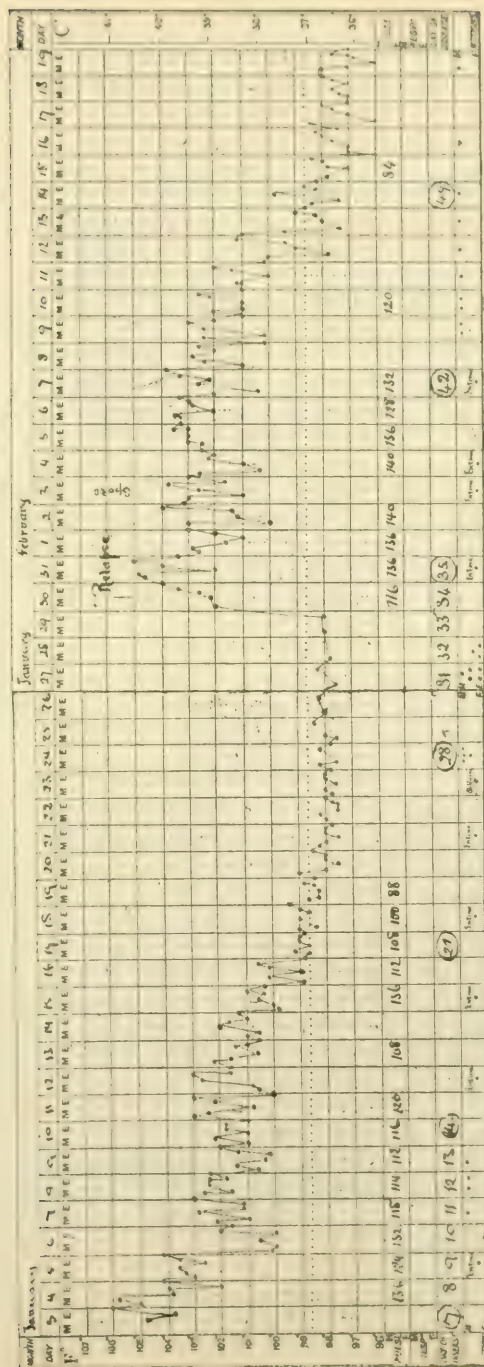


CHART II.—Enteric fever; relapse twentieth day (interval six days).

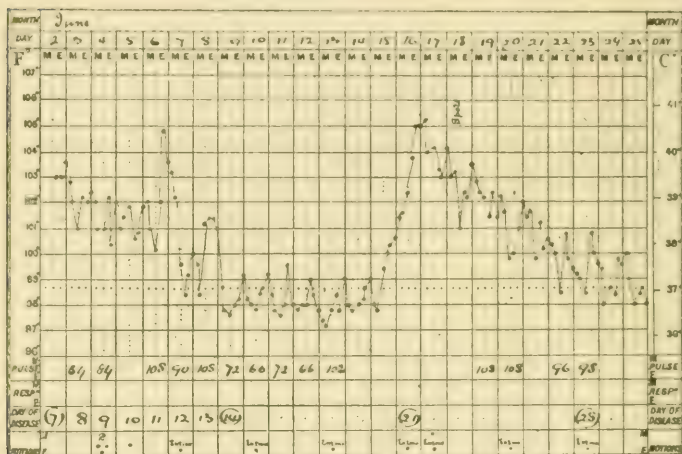
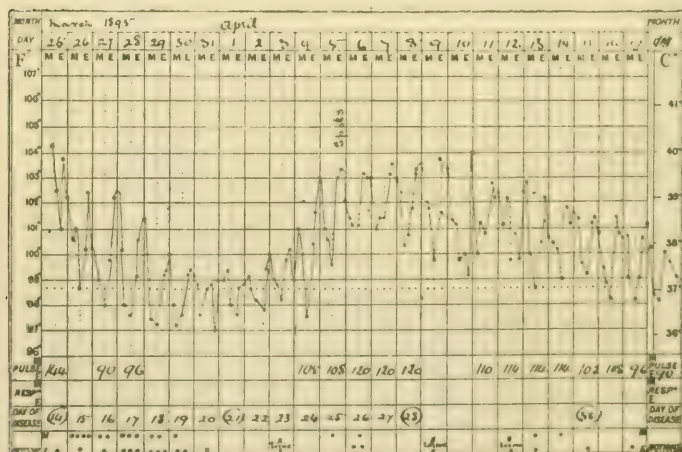


CHART III.—Enteric fever; relapse or "recrudescence" twenty-second day (interval undefined).





interval to be eleven days. The average duration of the primary attack was twenty-six days, and of the relapse fifteen days. It will, therefore, be apparent that if the length of the interval be added to that length of time consumed by the relapse, the sum is also twenty-six days; in other words, the occurrence of a relapse had exactly doubled the whole duration of the illness.

*Morbid anatomy.*—The morbid appearances found post mortem in cases fatal in relapse are an exact counterpart of those characterising the original affection.

It is an interesting fact, however, that the lymphoid follicles in the intestine which were originally the seat of ulceration are almost invariably spared. One finds the fresh ulcers side by side with those recently cicatrised, and there is no evidence pointing to any of the follicles primarily affected undergoing either disintegration or sloughing. If it were so, we should expect perforation to be more frequent in relapse than it is in a primary attack, whereas the contrary is true, as indeed it is of hæmorrhage.

Now, owing to the fact that it is those glands which lie in the immediate vicinity of the ileo-cæcal valve which are most prone to be affected in an attack of enteric fever, it is customary in relapse to find the ulceration for the most part situated higher up in the ileum, the explanation being that most of the Peyer's patches lying nearest the valve have already had their turn, and are consequently spared. The mesenteric glands are again infiltrated, and the spleen may be even larger than we may have reason to believe it was in the original attack. I have never met with suppuration in any of the mesenteric glands, but this may easily be accounted for by the fact that the occurrence is uncommon even in uncomplicated enteric, and the opportunity of making a post-mortem examination in cases fatal in relapse occurs but rarely.

The specific bacillus may be found in the ulcers, the mesenteric glands, and in the spleen without difficulty, and one would expect that it might be discovered in the urine and in the evacuations at an earlier date than is the rule in a primary attack.

Whether the blood-serum possesses a higher agglutina-

tive power on cultures of the bacillus in relapse than it does in the primary attack I do not know, but it is a point worthy of observation.

Various suggestions have been proffered to explain the occurrence of relapse in enteric fever.

The belief which has gained the widest currency is that it is directly dependent upon dietary indiscretions. It is assumed that the relapse follows on the too early administration of a solid or partially solid diet. That relapse does frequently follow upon the exhibition of a solid diet is perfectly true; but that it arises in consequence of its administration is quite another matter.

No better example of the *post hoc ergo propter* fallacy (and there are a good many) exists in medical practice than the belief which accredits the cautious commencement of a solid diet in enteric with the responsibility of producing a relapse. Over and over again I have seen a relapse start upon the very day on which it had been decided to give solid food, but one link in the chain has frequently been missing, and that an important one, viz. the actual administration of the food.

The key to this fallacy seems to lie chiefly in the fact that the physician's resolve to give solid food, and the liability to relapse, are both due at about the same time. You may be told with a considerable amount of assurance that too early indulgence in a solid diet during convalescence from enteric fever will bring about a relapse; but if you ask for information as to *how* it is going to produce it, you may very probably wait some time before you get a reply which is convincing.

For my part I am perfectly willing to believe that an undigested crust may cause perforation of the bowel, through rupture of the thin floor of an intestinal ulcer; but that a thin slice of bread and butter or a little boiled fish is competent to start a specific bacterial activity, which shall produce a toxine capable of giving rise to the progressive development of the symptoms of enteric fever—after the process has died a natural death—is an assumption which I find more difficult to digest than the enteric patient probably would his crust. Not only is the suggestion not confirmed in practice, but it is deficient theoretically.

It has been suggested that relapse may be dependent upon the constipation which is a conspicuous feature throughout so many attacks. Murchison, however, objected to this explanation by reason of so many of his cases being affected with diarrhoea, and I am able to fully confirm this objection from my own experience.

It was the belief of Dr. Collic, who had an immense experience of the disease, that energetic antipyretic treatment in enteric fever, or in other words the use of the cold bath, decidedly increased the tendency to relapse; and this possibility is admitted by Dr. Barr of Liverpool, who, so thoroughly does he believe in the cold bath treatment, even goes so far as to keep his patients in a tank for several weeks continuously. Personally I have had but little experience of the cold bath treatment of enteric, so cannot speak from actual knowledge, but I am quite prepared to believe that any treatment of a repressive or abortive character would be very likely to conduce to subsequent relapse. These observations are doubtless applicable to cases of relapse which have been treated by the antipyretic method, but we are forced to admit that no satisfactory solution is forthcoming which can be regarded as of general application. It would seem that the explanation of the phenomena underlying a relapse should be sought on no narrow basis, but rather in the proper understanding of those processes which are intimately concerned with the problem of acquired immunity.

### *Diphtheria.*

That relapse is not a common development in diphtheria may be inferred from the figures which I have already quoted, viz. an incidence of 1.1 per cent. amongst 4131 cases. It is, however, satisfactory to remember that when relapse in diphtheria does occur, it is very unlikely to be overlooked, because the general symptoms of the disease are accompanied by a definite objective appearance in the fauces or nasal passages.

In discussing "relapse" as it occurs in diphtheria, I do not refer simply to a redevelopment of diphtheritic exuda-



tion, but to a recrudescence of membrane, accompanied by symptoms ascribable to the absorption of a specific toxine.

As a typical illustration of such development I may quote the following case :

A. W—, æt. 6, was admitted on the fifth day of a fairly severe attack of diphtheria. The fauces were much swollen, and the surface of each tonsil was covered with a thick layer of rather dirty white exudation, extending over the right side of the pillars of the fauces, and on to the adjacent side of the uvula. Slight rhinorrhœa noted, of a thin mucoid character, which was probably the result of faucial obstruction simply, as no exudation could be made out by means of the nasal speculum. The subjacent lymphatic glands were swollen and tender, especially on the right side ; temp.  $102^{\circ}$ , pulse 120 ; taking food with difficulty, as deglutition gives rise to considerable pain.

Twenty-four hours later the temperature came down to  $98^{\circ}$ , and the membrane on the right tonsil began to separate. Throat less painful ; gland swelling less. Rhinorrhœa ceased. Pulse 86. Albuminuria, distinct trace.

On the fourth morning after admission all exudation had disappeared, and the fauces, with the exception of slight superficial ulceration on the tonsils, were practically well. The albuminuria had gone, and the child eat, swallowed, and slept well.

On the thirteenth day of disease the voice was noticed to be somewhat nasal, and fluids occasionally returned through the nose. Two days later there was slight internal strabismus, most marked in the left eye, and a slight degree of ptosis. With the exception of a loss of both patellar reflexes, and some questionable anæsthesia in the right leg, no further symptom of paralytic affection supervened, and the child's condition showed gradual improvement.

On the nineteenth day of illness, representing an interval of twelve days since the exudation had disappeared, the temperature rose to  $102.4^{\circ}$ , and the child seemed poorly, but not sufficiently ill to lose interest in his toys. The right tonsil again became covered with a thin, dead-white exuda-



tion, and the glands under the jaw on that side were slightly tender on pressure.

During the following night the child shivered several times, the temperature rose to  $104^{\circ}$ , and the pulse was 132. In the morning the exudation had involved to a slight extent the left tonsil also, but the nares, palate, and larynx were unaffected. No albuminuria. During the course of the day, under energetic treatment, the temperature fell to  $100^{\circ}$ , and the faucial exudation ceased to spread. The case progressively improved from this date, and in three complete days from the onset of the relapse the fauces were again clear.

No further paralysis supervened, but the affection of palate continued for an unusually long time, viz. rather more than four weeks.

Relapse is more common in children than in older patients, and this, no doubt, is simply the expression of their greater susceptibility to diphtheria. It shows no predilection for either sex. The fauces and tonsils are the parts most commonly affected, and the disease but rarely spreads to the nares or larynx if the patient is promptly brought under treatment.

The relapse in diphtheria, like that in enteric, is usually milder and less prolonged than the primary attack. It may occur at any time during later convalescence, but very rarely before the expiration of a fortnight from the time when the previous exudation disappeared.

Relapse is somewhat more common in cases treated with antitoxin than in those treated by former methods; the proportionate incidence of relapse amongst 3529 cases completed in the Metropolitan Asylums Board Hospitals during the course of last year, the antitoxin year, being 1.4 per cent.; whereas in 1894, the year immediately preceding the use of antitoxin, the incidence amongst 3042 cases was .9 per cent.

This slight increase in the percentage of relapses is no argument against the use of antitoxin; it simply means that another dose or two was required to complete the protection, which in the case of diphtheria does not seem, as a rule, to be of long duration. It is, I think, no more surprising that

the antitoxic treatment should have the effect of somewhat increasing the tendency to relapse in diphtheria than that the cold bath, or any other form of abortive or repressive treatment, should conduce to the same result in enteric.

From a knowledge of the life history of the bacillus of diphtheria, both as regards the conditions regulating its growth and the variation in virulence which its products may undergo, we are prepared to believe that any circumstances which render the bacterial soil more favorable to growth, or which lower the vital resistance offered by the blood and cells of the host, may lead to renewed activity on the part of a microbe which had become practically harmless. This renewed microbial activity is shown not only in an increase in their numbers, but also by the resumption by them of their most highly specialised function, that of elaborating a specific poison.

It would appear that catarrhal inflammation of the faucial structures and a simple tonsillitis are both capable of supplying these very conditions, for it has frequently been noted that during the convalescent stage of diphtheria a simple faucial catarrh or a non-specific tonsillitis not infrequently precedes by several days the reappearance of membrane and the general symptoms which are characteristic of the relapse. This belief is strengthened by a fact which has often been observed, that in the case of a diphtheria convalescent who has become attacked with scarlet fever the faucial inflammation which is part of the scarlatinal process is frequently attended with the appearance of a fresh exudation, which bacteriological examination shows to be diphtheritic, although the throat may have been clean for several weeks previously. And the same thing is often true when measles is the intercurrent disease. Here the mucous membrane of the respiratory tract, becoming weakened by the catarrh of measles, falls a ready victim to the infection of diphtheria, and the result is simply disastrous. The membrane usually re-forms, this time in the larynx, trachea, and bronchial tubes down to their ultimate ramifications, and the child, as a rule, dies from mixed toxæmia and suffocation.

It would seem, then, that the occurrence of relapse in diphtheria is frequently if not invariably dependent upon

CHART IV.—*Diphtheria* ; relapse nineteenth day (interval eleven days).

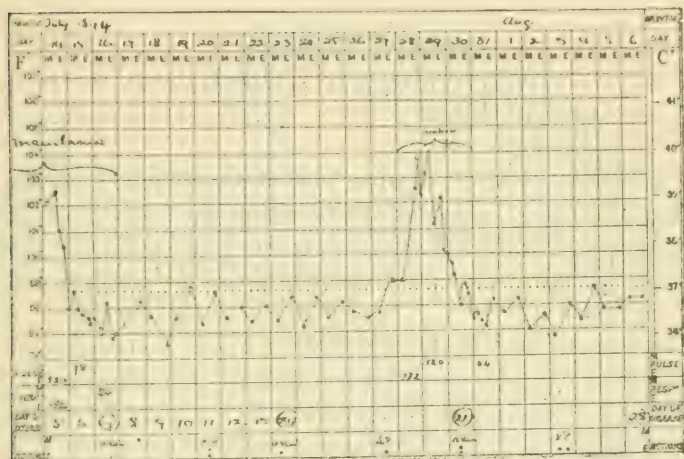
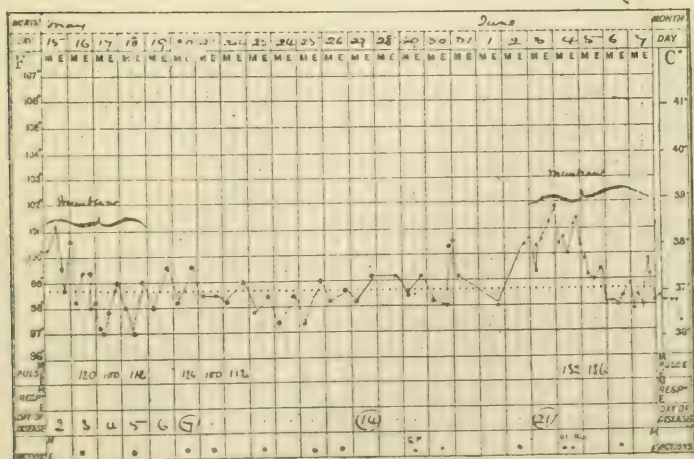


CHART V.—*Diphtheria* ; relapse twentieth day (interval fifteen days).



the operation of some extrinsic cause, which is capable of so modifying the activity of the bacilli which still linger in the fauces as to bring about a re-formation of membrane and a fresh manufacture of the specific poison.

### *Scarlet Fever.*

The occurrence of relapse in scarlet fever in the series of 14,903 cases to which I have already referred comes out at '53 per cent.

This is in close agreement with the incidence recorded by other observers. Hopwood states that the percentage of relapses in the scarlet fever cases treated in the London Fever Hospital during a considerable number of years was about '5 per cent.

In a paper on "Relapse in Scarlet Fever" published about three years ago in the 'Medical Times' I showed that in a series of over 12,000 consecutive cases under my own care the percentage incidence was just over '6 per cent.

Whitelegge states, as the result of his own experience, I believe, that a true relapse occurs in more than 1 per cent. of cases. Most writers, however, are silent on the subject altogether, its occurrence being not by any means so well recognised in the profession as its frequency would appear to warrant.

Now, owing to the fact that an erythematous rash is occasionally seen after the true scarlatinal eruption has faded, and, moreover, that the scarlet fever convalescent not infrequently becomes affected with a sore throat which is sometimes febrile, it behoves us to exercise the greatest care in recording the occurrence of a "relapse."

We know that either the primary attack or the relapse may be mild, but no case should be noted as an instance of "relapse," unless the eruption, temperature, throat, tongue, and subsequent desquamation in such case are really characteristic of the disease. I can honestly say that such has always been my own practice. The following case serves to illustrate a scarlet fever relapse.

G. W—, æt. 8, admitted on the third day of scarlet fever. The eruption, which was very nearly at its height, was of a



markedly puncto-erythematous character, most intense on the trunk and arms, and to a somewhat less extent on the legs. The face was flushed excepting the circumoral region, which remained pale.

The fauces, tonsils, and uvula were swollen, red, and angry-looking, and great pain was complained of on swallowing milk or saliva. Submaxillary glands swollen and tender, but cellular tissue not apparently involved. Tongue red and raw except in central portion at back, which still remained coated with thick white fur. The anterior and lateral portions being denuded of their epithelium, and the fungiform papillæ showing undue prominence, gave to it the typical strawberry character. Temp.  $104.2^{\circ}$ ; pulse 144. Child seems slightly delirious (this became very obvious towards night-time).

The case progressed as a typical instance of scarlet fever. The eruption had faded by the end of the week with the exception of several hyperæmic papules on the outer side of the legs, and the temperature was normal both night and morning for the first time on the same day (the seventh). Fauces comfortable, swelling almost gone, slight ulceration remaining on both tonsils, which, however, are quite clean. Desquamation by this time was advanced on the face and neck, and was clearly visible on the chest and upper arms. Peeling of the skin proceeded in the usual manner, and no complication arose to interrupt the normal convalescence.

On the evening of the twenty-fifth day of the attack the temperature again rose, troublesome vomiting set in, the child complained of feeling chilly, and swallowing became painful.

On the following day a typical scarlatinal eruption appeared, first on the trunk, and in the course of the day invaded both upper and lower extremities. The throat affection remained limited to a vivid redness and some œdema of the mucous membrane; the tongue, which by the morning had become coated with a creamy white fur, during the course of the day showed evidence of epithelial denudation at the tip and edges. By the morning of the twenty-eighth the rash had begun to fade, the tongue had assumed

the raw strawberry character, and the temperature, which on the day previous had been  $102.8^{\circ}$ , fell to  $100.4^{\circ}$ .

By the fifth evening the temperature was normal and the child practically convalescent. A new desquamation commenced, and had become quite advanced upon the trunk and thighs before the original desquamation was completed on the hands and feet. In this case the relapse was milder than the previous attack.

That the relative severity of the relapse and of the primary attack are usually in inverse proportion is even more true of scarlet fever than it is of either enteric fever or diphtheria; and, moreover, the gravity of the scarlatinal relapse is apt to be considerable,—indeed, I am not sure, in reviewing my own experience, that it is not more often so than mild; so many of those I have seen have taken on a septic character.

The relapse may occur at any stage of scarlet fever convalescence from the ninth or tenth day onwards. I have seen instances of a relapse arising every week from the second to the sixteenth. When the interval becomes extended to this length one is inclined to speak of them as second attacks. Whitelegge states that they are most frequent in the fourth week. Youth seems to be a predisposing factor, but sex appears to be without influence. The occurrence of a relapse has a very important bearing on the determination of the length of quarantine. My own practice is to regard a patient who undergoes a definite relapse as equally infectious as one who is the subject of a primary attack, and I regard the same length of quarantine as indicated. I may say in passing that in respect to the partial redesquamation which occurs in some patients, usually limited to the hands and feet, I should not regard the second peeling as necessarily or even probably infectious unless it had been preceded by a definite relapse. You are occasionally confronted with this problem in practice, and your decision may be of considerable importance to the patient.

The question as to whether these cases of a second appearance of the signs of scarlet fever in the same individual should be regarded as a re-infection from within, or whether they should more properly be regarded as a

distinct second attack, in other words a re-infection from without, is one which is certainly open to discussion. The fact, at any rate, must be admitted, that such cases are evidence of a renewed susceptibility after a comparatively short interval in a particular subject. The immunity conferred by the primary attack in some persons is more short-lived than it is in others; and whether the re-infection be intrinsic or extrinsic in its origin is of little moment apart from its bacteriological interest.

That second attacks of scarlet fever are much more frequent than is usually held by the profession at large I am quite convinced, if one may judge by the fact that such cases are from time to time reported in the medical journals as being of distinctly unusual occurrence, and therefore worthy of being put on record.

In the fever hospitals their more or less frequent occurrence is well recognised, and excites but passing interest; and that they do occur more frequently in patients treated in the fever hospitals than in an equal number of cases treated in their own homes is, I think, beyond dispute.

That so-called relapses should be more common in hospital cases is only what might be expected when one remembers that the infectivity of the patient's environment is constantly being renewed by the admission of fresh cases into the ward. Now, if his acquired immunity be not of sufficient duration to cover the period of quarantine, he would naturally be more liable to become the victim of a second infection than he would have been if treated at home, where the relative infectivity of his surroundings was becoming a constantly diminishing quantity. Experience, moreover, would seem to indicate that the degree of infectivity in scarlet fever gradually diminishes throughout the period of desquamation, being greatest at about the end of the first week, when in favorable cases the fever is abating, and the fine powdering on the face and neck is at its height. The skin of the hands and feet, however, which is the last to separate, would not appear to be attended with anything like the same degree of infectiousness as attaches to the cuticle which separates at an earlier stage.

The patient, then, who during his scarlatinal attack is

CHART VI.—Scarlet fever; relapse ninth day (interval five days); recovery.

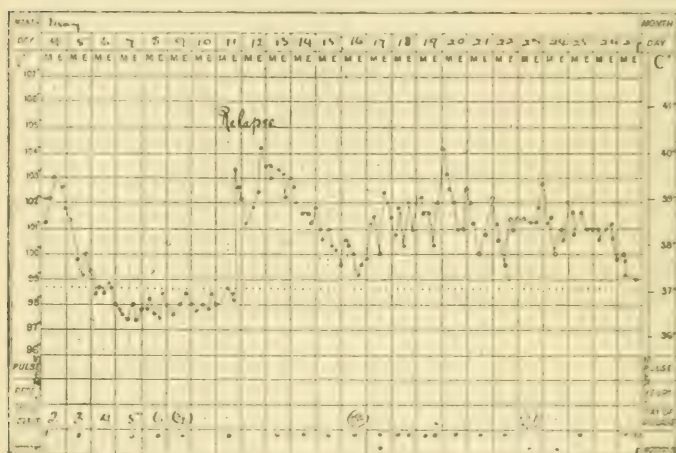
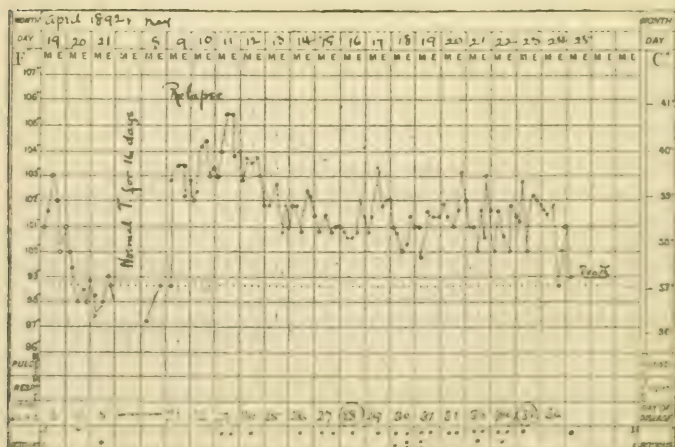


CHART VII.—Scarlet fever; relapse twenty-first day (interval seventeen days); death.





isolated in his own room (assuming that his acquired immunity be sufficiently extended to protect him from the infection which is being given off in constantly diminishing intensity from his own person), would be far less likely to contract a second attack of the disease than one who, in a scarlet fever ward, is constantly exposed to the renewed infection of freshly admitted cases.

In view of the foregoing suggestions I cannot help thinking it is more reasonable to regard the so-called "relapse" in scarlet fever, in the later cases at any rate, as evidence of a re-infection from without, rather than a recrudescence of the virus, which, I take it, must depend upon a re-access of vitality on the part of some specific microbe.

If any such process were really a matter of fact, one would expect to find that relapses were just as frequent in private practice as they are known to be in the wards of a fever hospital.

### *Smallpox.*

In reference to the question as to whether a relapse ever occurs in smallpox, I do not think I can do better than quote from a reply which I have received from Dr. Ricketts, the superintendent of the smallpox ships, in answer to an inquiry which I had addressed him on the subject. He says, "I have never seen a case of relapse, nor heard of one which could be accepted, beyond the one or two classical cases reported in certain books." Dr. Ricketts further says, "I dare say you might find records of spurious cases. For example, I think there were three cases related in the 'British Medical Journal' a week or two ago. The first of these was apparently a case of ague in a convalescent smallpox patient, in which a gratuitous diagnosis of relapse was made by a man who had never seen the case. In the second case no particulars were given. In the third, a woman caught smallpox in a smallpox hospital to which she was admitted, suffering from what I should imagine to have been a papular syphilide. I dare say there are other such cases recorded in periodical literature. If relapse occurs at all in smallpox it must be so excessively rare, that before a case can be accepted, it must be proved up to the hilt."

In addition to Dr. Rickett's evidence, I have had the opportunity of asking the opinion of those who have had charge of practically all the smallpox cases which have occurred in London during the last twelve years. The answer in each case was invariably the same: "I have never seen it."

I think, then, that smallpox, as I have already shown in respect to typhus, may be regarded as one of those diseases in which relapse is practically unknown; but when an instance is recorded, of which the clinical signs are beyond question, it may be regarded as nothing less than a medical curiosity.

#### *Other Diseases.*

Now, in respect to those diseases which are not properly admissible into the public fever hospitals, but of which a good few cases manage to make their appearance one way or another in the course of a year, viz. whooping-cough, chicken-pox, measles, and r  theln, the only one in which an unquestionable relapse is recognised as occurring is whooping-cough. It is a well-known fact that during the convalescence of whooping-cough the "taking a fresh cold," as it is usually called, results not only in a reappearance of the bronchial catarrh, with possibly more serious lung trouble, but in a return of the characteristic "whoop" also. The attack in this case is frequently prolonged for another two or three weeks. Moreover, it is an interesting fact that if either measles or scarlet fever is caught during an ordinary attack of whooping-cough, the whoop is often entirely dropped during the febrile stage of the intercurrent disorder, only to reappear again when the temperature has fallen to normal. What the explanation is I do not know, but its occurrence is very likely to be recorded as an instance of relapse of whooping-cough if the observer does not happen to be aware of this peculiarity.

I have once seen an attack of r  theln to follow genuine measles at an interval of less than three weeks. This one might easily have been excused for mistaking for a relapse of measles, had one not been prepared for the r  theln in view of the occurrence of previous cases.

The possibility of the appearance of the two diseases in quick succession in the same individual should never be forgotten, especially before committing oneself to the diagnosis of a measles relapse, which I believe to be exceedingly rare. It may be, and no doubt is, quite practicable to make a diagnosis in the majority of cases, but there *are* cases both of measles and of r  theln which I will defy a human observer to differentiate with certainty,—that is, unless his experience has been a very limited one.

One's confidence in being able to invariably distinguish measles and r  theln is usually in inverse ratio to the amount of one's practical experience. At any rate, I candidly confess that it has been so in my own case. In chicken-pox, the eruption, as is well known, usually appears in several successive crops. Each crop is attended with a fresh elevation of temperature, the height of the temperature usually being directly related with the comparative number of pocks. In some severe cases the period covered by this liability to successive exacerbations extends over ten days, or even more; though in the majority it is all over in less than a week. For my own part, I see no reason why each of these successive developments in chicken-pox should not be regarded as the expression of a definite relapse, just as one speaks of relapse in the case of diphtheria, erysipelas, enteric, scarlet, or relapsing fever. In each case the relapse represents a reiteration of the symptoms of the original attack, and perhaps the most obvious distinction between them is in respect to the relative frequency with which the relapse occurs in the different diseases. From this point of view relapsing fever and chicken-pox would be at one end of the scale, and diphtheria and scarlet fever at the other; whereas enteric, erysipelas, and whooping-cough would occupy an intermediate position.

It would evidently be a mistake to expect that the pathology of relapse in every disease would be analogous. In relapsing fever we know that the relapse, like the primary attack, is attended and preceded by an enormous multiplication of specific micro-organisms in the blood, and we infer that something of the same kind takes place in scarlet fever and some other diseases.

In diphtheria we know that the relapse is preceded and attended by the multiplication of the specific micro-organisms in a definite locality which is outside the circulation, and that they do not enter the blood-stream except as a kind of overflow in severe cases, and we infer that in the early stage this is true of enteric fever.

In the former case it may be fairly assumed that the symptoms of relapse, equally with those of the original attack, are mainly due to the actual presence of the microbes in the blood, and possibly to a less extent to the effect of their toxine. In the latter case the symptoms of relapse are undoubtedly due to the noxious influence of the toxine alone after it has become absorbed into the circulation.

In either case we are justified in regarding the occurrence of a relapse as dependent upon a partial loss of the immunity acquired in virtue of the primary attack, the duration of which would necessarily vary in different patients, as indeed it seems to in respect to different diseases.

In relapsing fever and chicken-pox the initial protection acquired is incomplete, and is not of sufficient duration to last until the infective element is routed in its struggle for existence within the body ; whereas in enteric, diphtheria, and scarlet fever the protection acquired in the primary attack is usually complete, and in the large proportion of attacks, of lifelong duration.

Into the question as to what is the nature of those processes which are concerned in bringing about this protection I do not propose to enter, as the subject of immunity, though of the highest scientific interest, can hardly be regarded as within the scope of this paper.



# ENTERIC FEVER AND SEWAGE GAS.

ON AN EPIDEMIC OF ENTERIC FEVER AT  
ST. PETER'S HOME, WOKING.

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By W. WELLINGTON LAKE.

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ST. PETER'S HOME FOR INVALIDS, Woking, was opened in 1885. A new block was added in 1892. No person suffering from infectious or contagious illness is admitted. The Home is situated at Maybury, in the parish of Woking. It stands in seven and a half acres of uncultivated ground, amidst the pines and heather of Surrey, on a deep bed of the middle Bagshot series, at an elevation of 140 feet above Ordnance datum, and commands extensive views of the surrounding country. The land to the north, east, and west is nearly level, whilst to the south there is a rapid fall of about 1 in  $7\frac{1}{2}$  feet. There is accommodation in the Home for 130 residents.

Since 1889 only one case of infectious disease has been notified. This was a case of erysipelas which occurred in 1894. Dr. A. J. Howlin, honorary physician to the Home, informs me, however, that from time to time several cases of tonsillitis had occurred amongst the inmates, which were attributed by him to drainage poisoning; and before the outbreak of enteric fever which occurred in June, 1895, attempts were made under his advice to improve the existing system for the disposal of sewage.

In June, 1895, there were 106 inmates in the Home, all

ST. PETER'S HOME, WOKING.—EPIDEMIC OF ENTERIC FEVER, MIDSUMMER, 1895.  
*Table showing dates of attack, ages, occupations, particular part of building in which each of the ten patients was attacked, together with note as to two other cases which occurred after leaving the Home.*

No.	Patient.	Age.	Occupation, &c.	Onset.	Remarks.
1	Miss M. H.	26	"Lady novice"	June 4	Slept in new block. This patient was nursed from June 10th by Nurse G. W. (No. 8), and who herself sickened with the fever July 5th. Used w.c.'s and slop sinks in new block.
2	A. S.	18	Wardmaid	June 10	Died July 18th. Was nursed from June 14th by Nurse E. H. (No. 10), who herself sickened with the fever August 2nd. At the end this patient was passing twenty motions a day. Slept in new block. Used w.c.'s and slop sinks in new block.
3	B. B.	20	Patient (chronic rheumatism)	June 12	Slept with Mrs. E. C. (No. 11) in room in old block, but used w.c.'s in new block.
4	A. M.	15	Wardmaid	June 22	Slept in new block. Used w.c.'s and slop sinks in new block.
5	N. F.	18	"	June 24	"
6	Miss C. W.	39	Patient (debility and hysteria)	June 29	"
NOTE.—The Home was closed after B. B.'s attack, and after the occurrence of the three cases between June 22nd and 29th the patients (except the enteric fever cases) were sent home, all having left before the end of the first week of July. After the third case, two engineers independently examined the drainage system, and it being found that the w.c.'s and slop sinks in the new block easily untrapped, they were disconnected from the drain June 22nd. No other cases occurred after July 7th except Nurse E. H., whose case undoubtedly arose through her own carelessness. See Report below (No. 10 of Table, and p. 208).					
7	E. C.	21	Wardmaid	July 3	Slept in new block. Quickly recovered and sent home. Had used same w.c.'s and slop sinks in new block.
8	Nurse G. W.	25	St. John's Institute nurse	July 5	Slept in new block, and had used the w.c. and sink. Came to the home June 10th, and sickened July 5th (cf. No. 1). A delicate woman, and had nursed all the other patients.
9	E. S.	16	Wardmaid	July 7	Had slept in new block and used w.c. and slop sink.
10	Nurse E. H.	33	St. John's Institute nurse	Aug. 2	Came to Home June 14th, and nursed No. 2 ( <i>q.v.</i> ) whilst she was passing twenty stools a day. During this time she did not use her nail-brush at all, and often omitted washing her hands after handling the bedpan.

#### NOTE AS TO TWO OTHER CASES CONNECTED WITH THE HOME.

11	Mrs. E. C.	37	Patient (Convalescent from influenza)	Left the home June 23rd and went to Eastbourne, where she at once sickened with enteric fever. Had used same w.c. in new block as B. B. (No. 3), and slept in the bed next to her in old block.	
12	E. H. M.	22	Patient (Convalescent from peritonitis)	Left the home July 2nd, and went to St. Peter's Home, Kilbarn, where she immediately sickened with enteric fever. Had used w.c. and slop sink in new block.	

females. Of these 80 were patients, and the remainder consisted of Sisters and staff.

The first case of enteric fever which occurred was diagnosed and notified on June 4th, and between that date and August 2nd, a period of fifty-nine days, ten patients were actually attacked with the disease while residing in the Home, and besides these, two other patients developed symptoms of typhoid fever within a few days of leaving, one in London and the other at Eastbourne. Of the cases in the Home one proved fatal, and the rest recovered.

The preceding table shows the dates of attack, the ages, occupations, and particular part of the building in which each one of the ten resident patients lived. Notes are added as to the two cases which occurred after the patients had left.

Although the outbreak seemed at first sight rather sudden—the whole of the cases having been notified within a comparatively short period—careful inquiry as to the dates of onset in each case showed that (after making due allowance for differences in incubation periods) they were so separated in point of time as to make it unlikely that the common cause was of a *temporary* character, as has frequently been the case in outbreaks due to accidental contamination of water or milk. They pointed rather to the existence of a recurring or sustained cause, such as would be accounted for by re-infection of water or food, or the persistence of a condition capable at any time of transmitting the disease from the sick to the healthy—as, for instance, by direct infection or by a defective drainage system receiving the dejecta containing the poison.

The various modes in which the outbreak may have originated may be discussed in the following order:—(1) water, (2) milk, (3) other foods, (4) drainage defects, (5) personal infection.

1. WATER.—The supply is entirely from the Woking Water Company, which derives its water from wells sunk deeply into the chalk at Albury Downs. Contamination of these wells is impossible, and though the water is hard it is very pure (*vide* my Annual Report for Woking, 1894). At St. Peter's Home the water, instead of being drawn direct

from the pipes (the supply being "constant"), is first passed into cisterns. These cisterns are situated in the roof of the building, and are open to the air, but they are far removed from any soil-pipes, drain ventilation, or other possible sewer-gas contamination, and the overflow pipes communicate with a separate rain-water system.

2. MILK was supplied from a registered dairy, and was entirely derived from cows on its premises. No milk was imported into this dairy from any other source. The whole of the water used at the dairy is obtained from the Woking Water Company. A sample of this milk, taken from the Home, was sent to Dr. Rideal, the Public Analyst, and was found to be entirely free from added water and fat abstractions; but as he was not instructed to make a bacteriological examination, he could not report as to the presence or absence of pathogenic organisms.

I have made careful inquiries from the medical practitioners who attended families to whom milk was supplied from the same dairy, and no suspicious case of enteric fever has arisen in any private house visited by them. Amongst these was Dr. Eager, whose family and servants, some twenty persons in all, were using milk at the time supplied from the same source. It is the more unlikely that the milk was at fault since from June 1st all the milk received at St. Peter's Home was boiled, it being the custom of the institution always to boil it during the summer months.

It will be noticed that E. S— (No. 9 in the table) developed the disease on July 7th, six weeks after the date subsequent to which all milk used in the Home had been boiled. It is most improbable that the milk could have been contaminated on the premises, since it is kept in one of two larders always scrupulously clean, far removed from any drains, and absolutely out of danger of sewage contamination. Further, it is important to note that none of the inmates who were on milk diet (of whom there were several) contracted the disease; while, on the other hand, eight out of the total number of cases were members of the staff, healthy, young, and on a full diet, and who therefore did not take milk except as an addition to tea or coffee.



3. OTHER FOODS.—(a) *Meat*.—All the meat was obtained from a firm who are large purveyors in the district, and have always enjoyed the reputation of supplying only the meat of good quality. The cooking was done under the supervision of one of the Sisters, herself a skilled cook. No uncured pork was used in the institution.

(b) *Oysters*.—These were out of season, and had not been consumed by any of the inmates.

(c) *Watercress*.—None had been eaten at the Home.

(d) *Other vegetables*.—The vegetables were entirely obtained from the garden attached to the Home. The water for this garden is drawn from large rain-water tanks, which receive their supply from the extensive roof of the building. The tanks do not in any way communicate with the sewage disposal system.

With regard to the water and other food supplies, it is important to note that though they continued to be derived from the same sources throughout the epidemic, and have since remained unchanged, no fresh case occurred after the drainage system was cut off on June 22nd, with the exception of those already incubating the disease, and Nurse E. H—, who it would appear directly contracted the disease through neglect of proper precautions, as described on page 208.

4. DRAINAGE.—The new block, in which all except two of the enteric fever patients slept and worked, is three stories high, and in it are six w.c.'s. and five slop sinks. Three of these closets were connected with one soil-pipe and two with another, and it was found that either the lower or upper ones were liable to syphonage.

The slop sinks in the block, although trapped, communicated with the soil-pipe, and were liable to syphonage, as in the instance of the w.c.'s. Hence it is clear that at times both w.c.'s and slop sinks were in direct communication with the drains.

All the w.c.'s in the new block were of the valve type, but there was a length of several feet of nearly perpendicular pipe between the boxes of the w.c.'s and the traps. Further, it was found that owing to paper and skeins of hair having

become entangled with the valves, the latter did not completely close the outlets of the basins, and consequently they could not retain water, and the considerable length of perpendicular pipe between the basins and the traps became a most dangerous receptacle for soil.

In the kitchen, situated also in the new block, there was a waste-pipe running from a tray which received the drips from a hot water tap. This waste-pipe communicated directly with the drain, and when the "smoke test" was applied the kitchen was rapidly filled with smoke.

The drain ventilating pipes running up outside the walls of the building were, with one exception, for the first six feet from the ground composed of cast iron, and thence to the summit of lead. Serious leakages were found at the junctions, caused by the different degrees of expansion of the two metals, and the want of durability of the red-lead jointing material. In several instances these defects were discovered in close proximity to open windows. In fact, one of the leakages occurred directly under a window beneath which Mrs. E. C— and B. B— slept (Nos. 11 and 3 in Table). The lead soil-pipes were simply received into the sockets of the earthenware drain-pipes ("slip joints"), without any attempt at cementing. The former were four-inch and the latter six-inch pipes. At the collar where the pipes joined each other the breaches were large enough to admit the hand, and when the "water test" was applied they leaked at the rate of two gallons per minute. The drain was not laid in cement, and the ground and adjoining walls of the building were saturated with sewage. Typhoid excreta could not fail to constitute a serious source of danger in such a system of drainage.

There were altogether some 300 yards of drains with only one very inefficient fresh air inlet. This was merely an open grating  $12\frac{1}{2}$  feet above the invert of the drain, which served, as the stench from it proved, more as a vent for foul air than an inlet for fresh. As a result this great length of drain was always full of gas, a fact easily demonstrated by removing any of the covers over the manholes, when these chambers emitted a very offensive smell. It needed only a syphoned w.c. trap, or one of the many leaks found in

drain, soil, and waste pipes, to convey this gas, charged with any poison it might contain, to the inmates of the Home, who were constantly exposed to the conditions arising from these structural defects.

It is not within the scope of this paper to enter into a discussion as to the presence or absence of the typhoid bacillus in sewer gas, but it is a well-known fact that when enteric fever has occurred in ill-drained buildings it has been most frequently found that the sewers have steep gradients, with insufficient aëration and ventilation—important factors in producing gas pressure.

As to the rest of the drainage system, the soil, slops, and bath water were conveyed by a deep drain into a cesspool on the low level ground to the south of the Home mentioned in the early part of the report. From this an attempt at sub-irrigation was made, but as the sewage did not come within ten or twelve feet of the surface, nitrification or aëration was impossible, and the ground became saturated and foul.

I will now attempt to demonstrate how the drainage system became contaminated with the typhoid poison.

(a) On March 13th, 1895, Nurse K. W—, who had been suffering from enteric fever, was admitted to St. Peter's Home, Woking, certified as free from infection. She subsequently informed Dr. Howlin that her bowels had been confined for ten days prior to her admission. She entered the Home within six weeks of the onset of the disease, and it is probable that the pent-up fæces contained sufficient of the poison to contaminate the defective system described above. This nurse used the w.c.'s in the new block.

(b) Nurse J—was admitted to the Home March 9th, 1895, after an attack of enteric fever, and though pronounced free from infection had some diarrhœa after admission. This nurse also used the w.c.'s in the new block.

These two nurses were the only patients convalescent or recently recovered from enteric fever admitted to the Home. They both used the w.c.'s emptying into the faulty soil-pipes which leaked into the ground below.

5. PERSONAL INFECTION.—Except in one case, that of Nurse



H— (No. 10 in Table), it seemed to me that personal infection could not be considered as a factor in the spread of the disease. It will be seen on referring to the Table that the patients who developed enteric fever were living in the Home under different conditions; for instance a lady novice, a wardmaid, and ordinary home patient shared neither sleeping accommodation, feeding apparatus, baths, nor clothing; the only thing they had in common was the use of the w.c.'s. It may also be noted that the lady novice, who was the first patient, had no work whatever in the wards, and was never brought into personal contact with B. B—who developed the disease eight days later. Nor could B. B— have personally communicated the disease to Miss C. W—, who was occupying a different ward, and had never been in contact with her.

Nurse E. H— appears to have contracted the disease directly from one of the patients. She came to the Home June 14th, for the purpose of nursing the patients already suffering from enteric fever. She was in attendance upon A. S— (No. 2 in Table), who died July 12th, and who just before her death was passing some twenty stools daily. She did not use a nail-brush, and was not even sure of always having washed her hands after handling the bed-pan.

As has been pointed out, with one exception no fresh cases occurred later than fourteen days after the drains were cut off, which is within the incubative period of enteric fever; the exception being the case of Nurse E. H—, who is probably, as has been shown, directly responsible for the fact that she contracted the disease.

The opinion as to the insanitary condition of the Home formed by Dr. Howlin and myself was fully confirmed by two expert sanitary engineers who made a detailed examination as to the whole system of drainage, and who have recommended extensive alterations, which the committee have recently carried out.

A valuable object lesson is given by the epidemic which has been described. It occurred in a comparatively new and expensively built institution, erected for the purpose of a convalescent home; and it is conclusively shown to have



been due to the faulty manner in which the drainage had been carried out.

It is hoped that when the suggested alterations in the drainage have been completed, the institution may successfully carry on its beneficent work without any further risk to its many inmates.



# MEDICAL REPORT.

1895.

By CHARLES R. BOX, M.D., B.S., B.Sc., F.R.C.S.

TABLE I.—*General Statement of Medical and Surgical Patients.*

				Males.	Females.	Total.	
Number of patients in Hospital, Jan. 1st, 1895				205	155	360	
" " " " Dec. 1st, 1895				204	162	366	
" " " " discharged or died during 1895 :							
				Males.	Females.	Total.	Rate per cent.
Cured	...	1969	...	1563	...	3532	61·37
Relieved	...	732	...	550	...	1282	22·27
Unrelieved or other causes	...	213	...	184	...	397	6·89
Died	...	305	...	239	...	544	9·45
Total				3219	2536	5755	
Average number of days of each medical patient's stay in hospital—							24·16.
" " " " surgical " "							23·72.

TABLE II.—*General Medical Statement.*

Number of Medical Beds <sup>1</sup> ...				...	...	171	
				Males.	Females.	Total.	
Number of patients in Medical Wards, Jan. 1st, 1895				69	54	123	
" " " " admitted during the year 1895				1008	919	1927	
Total				1077	973	2050	
" " " " in Medical Wards, Dec. 31st, 1895				69	65	134	
" " " " treated to a termination during 1895				1008	908	1916	
" " " " discharged or died during 1895 :							
				Males.	Females.	Total.	Rate per cent.
Cured	...	443	...	449	...	892	46·55
Relieved	...	295	...	271	...	566	29·54
Unrelieved or other causes	...	68	...	67	...	135	7·04
Died	...	202	...	121	...	323	16·85
Total				1008	908	1916	
Average number of days of each patient's stay in hospital—							24·16.

<sup>1</sup> This does not include 21 beds in Adelaide Ward, the statistics of which are given in the Report of the In-patient Department for the Diseases of Women.





Table of Diseases.

Cured.		Re- lieved.		Unre- lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
1								5 cases, including 2 nurses, originated in hospital.
3	5						1	7 cases originated in hospital, 4 in surgical patients and 3 in nurses. Nephritis complicated 3. The unrelieved cases were transferred to fever hospitals.
3	7			3	1			Transferred to the ships.
						1		
1								
17	16							2 cases were admitted as possibly enteric fever. Bronchitis occurred in 7, pleurisy in 2, albuminuria in 1, and gastro-intestinal disturbance was marked in 6. The incidence was heaviest in February and March (17 cases).
31	24	1				5	3	See Special Abstract.
	3							All facial. In 1 delirium and albuminuria, in 1 ulceration of cornea. The first mentioned also showed brawny œdema of legs, the result of a previous attack.
46	39					18	12	See Special Abstract.
	2		1				1	No P.M. on fatal case.
6	3							In 1 pneumonia, in 3 enteric fever, and in 1 otitis media suspected. In 1 remittent fever for 20 weeks with night sweats, slight jaundice and albuminuria.
	1	2	1					In 1 ulcerative stomatitis, in 1 left pleural effusion (aspirated), in 1 bronchitis, and in 1 broncho-pneumonia.
		6	1					In every case contracted abroad. Orchitis complicated 1.
						2	1	
						1		
1		1	1			1	1	In 2 congenital, others acquired. Of acquired cases: in 1 peritonitis of humerus and gumma in forearm, in 1 ulceration of soft palate, in 1 cicatricial deformity of face and epileptiform fits. Of congenital cases: in 1 bronchitis, and in 1, a youth, profuse fatal hæmatemesis. P.M.—Extensive fibroid change in liver and kidneys, dilated œsophageal veins.
40	50	2	4				1	Of non-fatal: 52 were cases of first attack, and in 20 of these there was evidence of mitral disease, in 6 others of mitral disease combined with pericarditis, and in 1 of the latter possibly aortic disease as well. Pericarditis alone occurred in 1, pleurisy in 1, erythema in 1, purpuric eruption in 2, chorea with mania in 1, and transient albuminuria in 1. 27 were cases of second attack, and 13 of these showed evidence of mitral disease, 2 of mitral and aortic disease, 3 had pericarditis, 1 pleurisy, 3 albuminuria, and 1 chorea. Measles complicated 1. Of the cases of third or later attack: mitral disease was present in 10, pericarditis in 1, pleurisy in 1, albuminuria in 2, subcutaneous nodules in 1, erythema in 1. The fatal case complicated exophthalmic goitre, and P.M. vegetative endocarditis of all the valves was found, with pericarditis, right pleurisy, and thrombosis of left subclavian and jugular veins; thyroid enlarged.

TABLE III—

DISEASE.	Number of cases.			Age.							Duration of residence.									
	Total.	M.	F.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	Above 60	Under 1 week.	Wks. 1-2	Wks. 2-4	Mths. 1-2	Mths. 2-4	Mths. 4-6	Mths. 6-9	Mths. 9-12	Above 1 year.
I. GENERAL DISEASES— <i>continued.</i>																				
Chronic articular rheumatism	8	1	7	...	1	1	2	1	2	1	...	2	2	3	1	...	...	...	...	...
Muscular rheumatism	1	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...
Gonorrhœal rheumatism	1	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...
Gout.	5	5	...	...	...	...	...	...	4	...	1	...	1	4	...	...	...	...	...	...
Rickets	13	7	6	13	...	...	...	...	...	...	...	4	7	...	1	1	...	...	...	...
Diabetes mellitus	10	5	5	...	...	3	3	2	...	2	...	4	1	1	3	1	...	...	...	...
Purpura	7	4	3	1	1	3	1	1	...	...	...	2	1	1	2	1	...	...	...	...
Anæmia	34	6	28	1	3	8	20	...	1	1	...	5	12	10	6	1	...	...	...	...
Pernicious anæmia	6	3	3	...	...	...	...	1	1	3	1	1	1	1	2	...	...	...	...	...
Hæmophilia	1	1	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Lymphadenoma	3	...	3	...	...	2	1	...	...	...	...	...	1	1	...	1	...	...	...	...
General tuberculosis	7	5	2	3	1	2	...	...	1	...	...	3	...	3	...	1	...	...	...	...
Disseminated sarcomata	3	3	...	...	...	1	...	1	1	...	...	1	...	1	1	...	...	...	...	...
Disseminated carcinomata	1	...	1	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...
Acromegaly	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...

*continued.*

Cured.		Re- lieved.		Unre- lieved.		Died.		REMARKS.
M	F	M	F	M	F	M	F	
...	...	1	7	...	...	...	...	
...	1	...	...	...	...	...	...	
...	...	...	...	1	...	...	...	Transferred to surgical side.
3	...	1	...	1	...	...	...	In 1 thrombosis of popliteal vein; transient albuminuria in 1; proposed operation for extensive deformity of hands refused in 1 case. See also "Mitral obstruction and incompetence."
...	...	4	3	...	...	3	3	Of non-fatal cases: convulsions in 1, tetany in 1, broncho-pneumonia in 1, diarrhœa in 3. Of fatal cases: convulsions in 2; collapse of lung in 2, diarrhœa in 2, associated in 1 with fever and petechial hæmorrhages.
...	...	4	4	...	...	1	1	Of non-fatal cases: in 1 malignant disease of umbilicus, in 1 mitral incompetence and history of Graves's disease, in 1 albuminuria, in 2 pruritus vulvæ. Both fatal cases terminated in coma; in 1 œdema and congestion of lungs, and in 1 phthisis and broncho-pneumonia.
3	2	...	...	...	...	1	1	Of non-fatal cases: in 1 mitral incompetence with history of rheumatism, in 1 epistaxis and menorrhagia, in 1 bleeding from gums and splenic enlargement. Of fatal cases: in 1 epistaxis, hæmatemesis, and hæmorrhage in membranes at base of brain.
...	18	6	8	...	2	...	...	In 1, a boy admitted three times during the year, enlarged spleen, mitral incompetence, epistaxis, albuminuria, and irregular fever, but no great increase in leucocytes. A mitral systolic murmur was present in 3 others. Thrombosis of veins of leg occurred in 1, albuminuria in 2, once following miscarriage. Vomiting was present in 4, one of these being possibly a case of gastric ulcer. Contracture of hand was present in 1, mental change in 2, synovitis of knee in 1. In 1 naso-pharyngeal adenoids were present, and by bleeding possibly caused the anæmia.
...	...	2	2	...	...	1	1	Of non-fatal cases: œdema of legs in 1, albuminuria in 2. Of fatal cases: in 1 dilated fatty heart with excess of fluid in serous sacs, in other extreme œdema of lungs and hydrothorax. Excess of yellow fat and ferric salts in liver and kidneys in both.
...	...	1	...	...	...	...	...	Hæmaturia and effusion into knee-joint.
...	...	2	...	1	...	...	...	Enlargement of cervical and axillary glands in each case.
...	...	...	1	...	4	2	...	The unrelieved case was subsequently readmitted and died. Tubercles widely disseminated in all. Evidence of old lung disease in 2. Tubercle of brain membranes in 3. No P.M. in 2.
...	...	...	...	...	3	...	...	In 2 abdominal lympho-sarcoma with dissemination. In 1 amputation of right arm 6 months previously for sarcoma of olecranon bursa.
...	...	...	...	...	1	...	...	Carcinoma of liver and lungs secondary to atrophic growth of left breast.
...	...	...	1	...	...	...	...	See Special Abstract.

TABLE III—

DISEASE.	Number of cases.		Age.								Duration of residence.									
	Total.	M. F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Under 1 week.	Wks. 1-2	Wks. 2-4	Mths. 1-2	Mths. 2-4	Mths. 4-6	Mths. 6-9	Mths. 9-12	Above 1 year.	
II. DISEASES OF THE SKIN.																				
Erythema. . . . .	4	2 2	1	...	...	3	...	...	...	...	2	...	1	1	...	...	...	...	...	
Erythema nodosum . . . . .	1	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	
Eczema . . . . .	3	1 2	1	1	...	1	...	...	...	...	...	1	1	...	...	...	...	...	1	
Urticaria . . . . .	1	...	1	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	
Herpes zoster . . . . .	1	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	
Pemphigus . . . . .	1	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	
Lupus . . . . .	3	...	3	...	...	2	1	...	...	...	...	1	2	...	...	...	...	...	...	
III. DISEASES OF THE RESPIRATORY SYSTEM.																				
Nasal catarrh . . . . .	2	1 1	1	...	...	1	...	...	...	...	2	...	...	...	...	...	...	...	...	
Simple laryngitis . . . . .	3	2 1	1	...	...	1	1	...	...	...	1	...	2	...	...	...	...	...	...	
Septic laryngitis . . . . .	1	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	
Syphilitic laryngitis . . . . .	3	1 2	...	...	...	1	1	1	...	...	1	2	...	...	...	...	...	...	...	
Laryngismus stridulus . . . . .	1	1	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	
Laryngeal obstruction . . . . .	2	1 1	...	1	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...	
Acute bronchitis . . . . .	33	16 17	10	3	1	8	2	2	5	2	13	14	5	1	...	...	...	...	...	
Chronic bronchitis . . . . .	20	14 6	...	...	1	2	3	4	9	1	3	6	7	3	1	...	...	...	...	
Bronchiectasis . . . . .	1	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	
Broncho-pneumonia . . . . .	57	36 21	54	2	1	...	...	...	...	...	18	17	17	5	...	...	...	...	...	



*continued.*

Cured		Re- lieved		Unre- lieved		Died		REMARKS.
M	F	M	F	M	F	M	F	
2	2							Rheumatic history in 1.
1								See also "Mitral obstruction and incompetence."
1	1		1					The case "relieved" was one of general eczema with occasional fever, albuminuria, and relapses.
	1							Sciatic distribution and much pain.
	1							Second attack.
	1		1					
	1		2					Lobules of ears involved in 1; nose, ear, and larynx in 1; arm and buttock in 1. 2 treated surgically and 1 with thyroid extract.
1	1							
2	1							Tracheotomy in 1.
1								
	1		1			1		Tracheotomy in 1. Fatal case a pregnant woman, admitted moribund, with laryngeal œdema and ulceration; no tracheotomy.
1								
1			1					1 possibly due to pressure from without. 1, the sequel of tracheotomy, transferred to surgical side.
15	12		2			1	3	Of non-fatal cases: mitral disease in 4, adenoids in 1, laryngitis in 1, asthma in 1, diarrhœa in 1, dysmenorrhœa in 1, albuminuria in 1, convulsions in 1, and discharging sinuses of chest with albuminuria in 1. Of fatal cases: extreme thoracic deformity with cardiac failure in 1, patent foramen ovale in 1, fibro-myomata of uterus in 1, recent adhesion of pericardium in 1. Lungs congested and cedematous, with muco-pus in tubes, in all.
	14	6						Emphysema in 8, albuminuria in 8, œdema of legs in 4, ascites in 1. Gummata of liver in 1, cirrhosis of liver in 1.
						1		Said to have had measles three times in infancy.
26	16	1	1			9	4	Of non-fatal cases: 3 followed measles and 1 whooping-cough. Otitis media in 3, convulsions in 1, mitral incompetence in 1. Fatal cases all in infants and young children. In 2 hyperpyrexia, in 1 pleurisy and pericarditis, in 1 pleural adhesions, and in 1 caseous bronchial glands. In 1 no P.M.; in all others ordinary evidence of broncho-pneumonia.

TABLE III--

DISEASE.	Number of cases		Age.							Duration of residence.									
	Total.	M	F.	Under 5	5-10	20	30	40	50	Above 60	Under 1 week.	Wks. 1-2	Wks. 2-4	Mths. 1-2	Mths. 2-4	Mths. 4-6	Mths. 6-9	Mths. 9-12	Above 1 year.
III. DISEASES OF RESPIRATORY SYSTEM— <i>continued.</i>																			
Acute pneumonia . . . . .	93	63	30	8	17	26	18	10	9	3	2	11	23	47	11	1	...	...	...
Phthisis . . . . .	79	46	33	7	3	9	27	15	12	4	2	12	12	30	18	6	1	...	...
Malignant disease of lung . . . . .	1	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Abscess of lung . . . . .	4	1	3	1	3	...	...	...	...	...	...	1	2	1	...	...	...	...	...
Gangrene of lung . . . . .	1	1	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...
Hæmoptysis . . . . .	1	1	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
Pneumothorax . . . . .	3	3	...	...	...	...	...	1	2	...	...	1	2	...	...	...	...	...	...
Pleurisy . . . . .	50	39	11	1	3	16	9	11	9	1	...	3	11	25	10	1	...	...	...

*continued.*

Cured.		Res. Unre- lieved. lieved.			Died.		REMARKS
M	F	M	F	M	F	F	
50	28	1	...	...	12	2	Situation of disease: right lung 55, left lung 30, both lungs 8. Of cases on the right side: in 16 the upper, in 23 the lower, in 3 the upper and middle, in 1 the upper and lower, in 6 the lower and middle, and in 6 all three lobes were involved. Of cases on the left side: in 1 the upper, in 25 the lower, and in 4 both lobes were involved. Of cases with both lungs involved the distribution was: both lower lobes 2, both lower and right upper lobes 1, both lower and right middle lobes 1, both lungs with exception of parts of apices 1, both upper and left lower lobes 1, left lower and right upper lobes 2. Of non-fatal cases: delirium in 7, hyperpyrexia in 1, delayed resolution in 2, temperature fell by lysis in 3, albuminuria in 20, acute nephritis in 1, effusion into left knee in 1, right otitis media in 1, pleurisy and pericarditis in 1, phthisis in 3, vomiting in 1. Of fatal cases: phthisis in 1, purulent pericarditis and double empyema in 1, interlobar empyema and abscess of lung in 1, mitral endocarditis, granular kidney and abscess of lung in 1, turbid pleural effusion in 1, tuberculosis of kidney and hypertrophy of left ventricle in 1, chronic renal disease in 3, fits in 1, jaundice and delirium in 1, dementia in 1. In 1 no P.M.
...	32	26	1	...	13	7	Of the non-fatal cases: laryngeal infection in 3, bronchitis in 1, pleural effusion in 4, dry pleurisy in 1, hæmoptysis in 13, displaced heart in 1, pericarditis in 1, dyspepsia in 2, vomiting and diarrhœa in 1, diarrhœa in 2, biliary colic in 1, tuberculous peritonitis in 1, albuminuria in 4, tuberculous kidney in 1, ischio-rectal abscess in 2, facial paralysis in 1, facial hæmiatrophie in 1. Of fatal cases: in 4 no P.M.; of the rest, in all but 2 both lungs were affected, and in these 2 the left only. Delusions in 1, refusal of food in 1, ulceration of larynx and trachea in 1, ruptured aneurysm in lung in 1, empyema in 1, ulceration of intestine in 1, emphysema of intestine and hæmorrhages 1, cirrhosis of liver in 1, fatty liver in 1, tuberculosis of epididymis in 1, thrombosis of popliteal vein in 1, general tuberculosis in 1.
...	3	...	...	...	1	...	The female numbers refer to readmission of the same case, an abscess containing necrosed bone occurring at the site of operation. The fatal case followed broncho-pneumonia in a child, abscess in left upper lobe, and secondary empyema; the abscess was drained.
...	...	...	...	...	1	...	Suicidal tendencies during illness. P.M.—A gangrenous cavity in right lower lobe, and grey bodies resembling tubercles disseminated over both lungs.
1	...	...	...	...	...	...	Probably phthisis. See also "Phthisis."
...	2	...	1	...	...	...	Right sided 1, left sided 2. Phthisis in 1.
28	10	11	1	...	...	...	Right sided 19, left sided 30, bilateral 1. Aspiration: once 15 times, twice 5 times, thrice once. Dry tapping twice. Phthisis, mitral disease, whooping cough, albuminuria, and pregnancy each in 1.

TABLE III—

DISEASE.	Number of cases.			Age.							Duration of residence.									
	Total.	M.	F.	Under 5	5-10	10-20	20-30	30-40	40-50	Above 50	Under 1 week	Wks 1-2	Wks 2-4	Mos 1-2	Mos 2-4	Mos 4-6	Mos 6-9	Mos 9-12	Above 1 year.	
III. DISEASES OF RESPIRATORY SYSTEM— <i>continued.</i>																				
Empyema . . . . .	18	13	5	6	2	6	2	1	1		3	3	5	5	1	1				
Spasmodic asthma . . . . .	1		1			1					1									
Mediastinal growth . . . . .	6	5	1	1	1	1	1	1	2	1	1	2		2	1					
IV. DISEASES OF THE CIRCULATORY SYSTEM.																				
Pericarditis . . . . .	4	1	3	1	2	1					1		2	1						
Adherent pericardium . . . . .	1	1							1				1							
Valvular disease of heart—																				
(a) Mitral obstruction . . . . .	3	1	2			1	1		1		1	2								
(b) Mitral incompetence . . . . .	27	9	18	1	3	4	2	7	6	3	1	2	4	10	8	3				
(c) Mitral obstruction and incompetence . . . . .	25	9	16	3	2	10	2	8			1	4	9	11						
(d) Aortic disease . . . . .	15	11	4			1	4	2	1	6	1	4	4	4	3					



continued.

Cured.				Re- lieved.		Unre- lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
6	2	5						2	3	Right sided in 11, left sided in 7. Resection of rib in 15, once preceded by simple incision. Second operation in 2, refused in 1. In 2 empyemata previously drained on same side. 2 followed acute pneumonia, 1 broncho-pneumonia, and 1 fractured rib. 2 complicated mitral disease. Of fatal cases: operation in all. In 1 empyema had ruptured into lung. In 3 no P.M. In 1 broncho-pneumonia, and in 1 general peritonitis without obvious cause.
				1						
					2			3	1	Non-fatal cases doubtful; in 1 paralysis of right vocal cord, and in other clanging cough. Of fatal cases: in 1 the new growth possibly originated in the lung, and was accompanied by secondary deposits in wall of heart and pressure on superior cava. Sarcoma of bronchial glands in 2, and tuberculosis of same glands in 1. Tracheotomy in 2; in both pressure on bronchi by enlarged glands.
1	1								2	Of non-fatal cases: 1 possibly scarlatinal. Of fatal cases: origin doubtful and P.M. refused in 1. For other, in which pericardium was aspirated, see Abstract.
								1		Adherent pericardium, hydrothorax, and chronically congested kidneys. See also "Pericarditis," "Mitral incompetence," "Mitral and aortic disease," "Ulcerative endocarditis," and "Aneurysm."
		1	1			1				History of rheumatic fever in 1 and of chorea in 1.
		8	15	1					3	History of rheumatism in 15, scarlet fever in 1, and gout in 2. Cause not traced in 9. Of non-fatal cases: pericarditis in 1, tricuspid murmur in 1, angina in 1, bronchitis in 3, pleurisy in 1, albuminuria in 3, ascites in 3, œdema of legs in 8, hæmoptysis in 1, epistaxis in 1, jaundice in 1, delirium in 1, ulceration of legs of doubtful origin in 1. Of fatal cases: adherent pericardium and cerebral embolism, with hæmorrhage in softened area, in 1; infarction of lung, deficient inter-auricular septum and right sided hydro-nephrosis in 1; adhesion of both pleuræ and pericardium in 1. Usual congestion of viscera in all.
		9	16							History of rheumatic fever in 15, chorea in 4, scarlet fever possible cause in 2, cause untraced in 4. Bronchitis in 5, phthisis in 2, pleurisy in 1, ascites in 4, œdema of legs in 10, albuminuria in 12. Syncopic attacks in 2, pulsating liver in 1, acute gout in 1, erythema nodosum in 1.
		11	3					1		Definite history of rheumatism in 5, of syphilis in 1. Suspected aneurysm of aorta in 1. In 1 (admitted twice) pure obstruction. Of non-fatal cases: angina in 1, bronchitis in 1, hydrothorax in 1, œdema of legs in 3, albuminuria in 3, infarction of kidney in 1. In fatal case: dilated heart, infarcted lung, gall-stone, and cardiac viscera.

TABLE III—

DISEASE	Number of cases			Age.							Duration of residence.									
	Total	M	F	Under 5	5-10	10-20	20-40	40-50	Above 50	Under 1 week	Was 1-7	Was 8-14	Mis 1-2	Mis 2-4	Mis 4-6	Mis 6-9	Mis 9-12	Above 1 year		
IV. DISEASES OF THE CIRCULATORY SYSTEM— <i>continued</i> .																				
Valvular disease of heart— (e) Mitral and aortic disease	39	25	14	1	6	7	13	3	4	4	1	8	8	8	11	2	1	1	...	
Ulcerative endocarditis	8	7	1	1	3	1	1	1	1		4		1	3	...	...	...	...	...	
Congenital heart disease	5	1	4	2	...	...	1	2	...	...	2	2	1	...	...	...	...	...	...	
Thoracic aneurysm	12	11	1				4	6		2		1	3	5	3	...	...	...	...	
Thrombosis	1		1	...	...	...	1	...	...					1	...	...	...	...	...	
Dilated heart	1		1	...	...	...	1	...	...		1			...	...	...	...	...	...	
Purulent myocarditis	1	1		1	...	...		...	...	1	...	...	...	...	...	...	...	...	...	
Raynaud's disease	3	1	2	1	...	1	1	...	...	1	1	1	...	...	...	...	...	...	...	
V. DISEASES OF THE DUCTLESS GLANDS.																				
Exophthalmic goitre	9		9	...	...	7	2	...	...		2	3	2	2	...	...	...	...	...	
Addison's disease	1	1				1	...	...	...		1	...	...	...	...	...	...	...	...	

*continued.*

Cured.		Re- lieved		Unre- lieved		Died		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
...	...	18	10	...	...	7	4	History of rheumatism in 25, chorea in 2, syphilis in 2. Of non-fatal cases: pericarditis in 1, mitral obstruction in 10, bronchitis in 4, pneumonia in 1, infarction of lung in 1, hæmoptysis in 1, hydrothorax in 1, ascites in 4, œdema of legs in 4, albuminuria in 8, vomiting in 1, hæmatemesis in 1, delirium in 1, epistaxis in 1, purpuric eruption in 1. Of fatal cases: hydrothorax in 5, ascites in 6, granular contracting kidneys in 1. In 2 the mitral valve was calcified, in 2 vegetations were found on aortic, mitral, and tricuspid valves, in 2 the pericardium was adherent.
...	...	...	...	...	...	7	1	Pneumonia in 3, tubal nephritis in 3, infarction of kidney in 2, of spleen in 3, and of liver in 1. Adherent pericardium in 1, subdural hæmorrhage in 1, meningitis in 2, ulceration of posterior wall of left ventricle in 1. In case not examined: infarction of lungs, albuminuria, purpuric eruption, and bedsores. See also Special Abstracts.
...	...	2	3	...	...	...	...	Includes 2 readmissions.
...	...	6	1	...	...	5	...	In 6 syphilis probable cause, in 2 alcoholism. Situation: ascending arch in 7, junction of ascending and transverse arch in 1, transverse arch 1, doubtful 3. Of fatal cases: pressure on œsophagus and left bronchus, with broncho-pneumonia, 1; pressure on superior cava, adherent pericardium, and pus in knee and shoulder-joints in 1; communication with superior cava and œdema of face in 1; rupture of aneurysm of first part of arch into right pleural sac in 1. Atheromatous condition of aorta in all cases examined. No P.M. in 1.
...	1	...	...	...	...	...	...	Followed parturition, veins of right leg. For other cases see "Anæmia" and "Diseases of nervous system."
...	...	...	...	...	...	1	...	Large fatty heart with dilated left ventricle.
...	...	...	...	...	...	1	...	Many small abscesses in myocardium, serous pericarditis, and basal pleurisy.
...	...	1	2	...	...	...	...	Hæmoglobinuria in 2, phthisis in 1, and tertiary syphilis in 1.
...	1	...	5	...	2	...	1	Mitral incompetence in 2, hæmoptysis in 1, vomiting in 1, albuminuria in 1, delusions in 1. In fatal case: large vascular thyroid, confluent broncho-pneumonia, hypertrophied left ventricle, ascites, and evidence of chronic peritonitis. For another fatal case see "Acute rheumatism." See also Special Abstract.
...	...	...	...	...	...	1	...	See Special Abstract.

TABLE III—

DISEASE.	Number of cases.			Age.								Duration of residence.									
	Total	M	F.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	Above 60	Under 1 week	Wks 1-2	Wks 2-4	Mos 1-2	Mos 2-4	Mos 4-6	Mos 6-9	Mos 9-12	Above 1 year.	
VI. DISEASES OF THE DIGESTIVE ORGANS.																					
1. <i>Alimentary canal.</i>																					
Thrush . . . . .	3	2	1	1	1	..	..	1	..	..	..	2	1	..	..	..	..	..	..	..	
Noma . . . . .	1	..	1	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	
Tonsillitis . . . . .	50	18	32	7	10	13	20	..	..	..	..	13	26	9	2	..	..	..	..	..	
Malignant disease of oesophagus	9	9	..	..	..	..	..	..	3	4	2	2	2	3	2	..	..	..	..	..	
Difficulty in swallowing . . . . .	2	2	..	..	..	..	..	..	1	1	..	1	..	1	..	..	..	..	..	..	
Dyspepsia . . . . .	32	12	20	..	1	7	7	5	5	6	1	9	9	10	4	..	..	..	..	..	
Gastralgia . . . . .	2	1	1	..	..	..	1	1	..	..	..	1	1	..	..	..	..	..	..	..	
Gastric ulcer . . . . .	52	6	46	..	..	..	9	29	8	3	3	8	7	15	16	6	..	..	..	..	
Hæmatemesis . . . . .	3	3	..	..	..	..	..	2	1	..	..	2	..	1	..	..	..	..	..	..	
Vomiting . . . . .	3	1	2	2	..	..	1	..	..	..	..	1	2	..	..	..	..	..	..	..	
Dilated stomach . . . . .	4	4	..	..	1	..	1	2	..	..	..	..	..	4	..	..	..	..	..	..	
Malignant disease of stomach	5	3	2	..	..	..	1	1	..	..	..	2	1	1	1	..	..	..	..	..	
Duodenal ulcer . . . . .	2	2	..	..	..	..	1	1	..	..	..	1	..	1	..	..	..	..	..	..	
Diarrhœa and vomiting . . . . .	20	18	11	21	3	..	..	2	..	..	..	12	8	7	1	1	..	..	..	..	
Diarrhœa . . . . .	21	9	12	11	2	..	1	1	..	1	2	11	6	2	2	..	..	..	..	..	
Dysentery . . . . .	3	3	..	..	..	..	2	1	..	..	..	1	2	..	..	..	..	..	..	..	
Colic . . . . .	5	3	2	..	2	..	2	1	..	..	..	2	3	..	..	..	..	..	..	..	
Constipation . . . . .	11	5	6	3	1	3	1	..	1	2	..	3	5	1	2	..	..	..	..	..	



continued.

Cases		Re-	Unre-	Died		REMARKS.
M.	F.	ceived	ceived	M.	F.	
2	1					Excision of gangrenous area. P.M.—Necrosis of inferior maxilla and broncho-pneumonia.
18	32					Includes 2 house surgeons, 8 nurses, and 2 students. 21 cases examined for diphtheria bacilli with negative result. Rheumatic pains in 1, otitis media in 1, albuminuria in 2.
	5		1		3	In 1 subsequent successful gastrotomy on surgical side. Of fatal cases: carcinoma of lower end in 2, just below cricoid cartilage in 1. Rupture into right pleural sac in 2, and in one of these a gangrenous cavity in lung and secondary growth in liver. In 1 infected glands pressed on trachea, œsophagus, and thoracic duct, producing chylous ascites. For other case see Special Abstract. Cause indeterminate.
5	13	2				
	1	7	6		1	
2	4	1				
	137	2			1	5
						Of non-fatal cases: hæmatemesis, or history of it, in all save 3, and in 1 of these melæna. Probable perforation and local inflammatory tumour in 1. Mitral incompetence and thrombosis of veins of leg in 1, rheumatism in 1, pregnancy in 1, and transposition of viscera in 1. For fatal cases see Special Abstracts.
3						Origin obscure.
1	1				1	Pregnancy in 1.
		1		2		1
				1	2	1
						2 transferred to surgical side. In fatal case: cicatricial contraction of duodenal ulcer, aortic and mitral disease. In one of the cases transferred there was a history of hydrochloric acid poisoning. All probably cases of pyloric disease. Transfer to surgical side in 1, where gastro-duodenostomy was followed by death from cortical cerebral hæmorrhage. In fatal case: pyloric carcinoma and secondary growths in liver.
1					1	Exploration in fatal case. General peritonitis followed perforation of an ulcer on anterior wall of first part of duodenum; a second shallow ulcer was found on the posterior wall.
10	4		1		8	6
						The fatal cases, with 3 exceptions, occurred in infants and young children in summer or autumn. In 4 there was no P.M. In 1 numerous small ulcers of small intestine, in 1 atrophy of left ovary and dilated ureter, in others no gross lesion. The non-fatal cases include only 2 adults, of whom one was infused with saline fluid on account of collapse.
6	9	2			1	3
						Of non-fatal cases in adults: 1 possibly tuberculous and in 1 albuminuria. Of fatal cases: 3 in infants without gross lesion and 1 in an adult, with hæmorrhagic enteritis and swollen follicles in colon.
1		2				In each case contracted abroad.
3	2					
5	5		1			



continued.

Cured		Re- lieved.		Unre- lieved.		Died		REMARKS.
M	F	M	F	M	F	M	F	
						2	1	Exploration in all. In 1 resection of gangrenous enteric intussusception, others both ileo-caecal; and in 1 death from peritonitis, in 2 from shock.
						3	1	Lower part of small bowel strangulated in all. Meckel's diverticulum in 2, but in 1 only did it cause the strangulation. A band arose in connection with an old hernia in 1, and with a calcareous gland in 1. Evident general peritonitis in 2. Exploration in 3.
1				1		1	2	Femoral hernia in 3, obturator hernia in 1, and pelvic adhesions in 1. 3 explored (one after transfer to surgical side).
1	3	1		1		1	2	Situation: rectum 2, sigmoid flexure 5, splenic flexure 2. Successful resection of growth from sigmoid flexure in 1, and from splenic flexure in 1, but many enlarged glands left. Left lumbar colotomy in 1, transfer to surgical side in 1. Of fatal cases: resection of growth from splenic flexure in 1; no P.M. Large rectal carcinoma, peritonitis, exploration in 1. Resection of growth from sigmoid flexure 1; no P.M.
19	9	2	1	3		7	3	First attack in 27, of these 5 proved fatal. Second attack in 11, 1 fatal. Exploration in 15, and in 5 others after transfer to surgical side. Of these 20, in 8 a local abscess was evacuated (one fatal); in 6, all fatal, there was general peritonitis; in 5 others the appendix was removed. In 2 cases of general peritonitis no operation was performed. Of fatal cases: in 2 no P.M., in 1 large pelvic abscess and gangrenous appendix, in all others perforated or necrotic appendix and general peritonitis; in addition in 1 pus had entered the inguinal canal, running in the sub-peritoneal tissue on the psoas.
1	3							
1								
			2					
1						2	1	In non-fatal case: peritonitis limited to lower part of abdomen. Of fatal cases: in 1, a child, no P.M.; in other 2 acute general peritonitis of unascertained origin accompanied in 1 by double pleurisy.
		2	1			2	3	A median cystic collection of fluid incised in 1 case, with recovery. Of fatal cases: incision in 2, in 1 faecal abscess, in 2 loculated collections of pus and empyemata, in 1 double tuberculous pleurisy and calcareous bronchial glands, in 1 intestinal tubercle without ulceration. Caseous mesenteric glands in 2.
			1					Possibly tuberculous.

TABLE III—

DISEASE.	Number of cases.			Age.								Duration of residence.								
	Total.	M.	F.	Under 5	5-10	20	30	40	50	60	Above 60	Under 1 week.	Wks. 1-2	Wks. 2-4	Mths. 1-2	Mths. 2-4	Mths. 4-6	Mths. 6-9	Mths. 9-12	Above 1 year.
VI. DISEASES OF THE DIGESTIVE ORGANS—continued.																				
3. Liver.																				
Cirrhosis of liver . . .	34	13	21	...	...	2	1	9	13	7	2	8	11	2	12	1	...	...	...	...
Gall-stones . . .	10	3	7	...	...	1	2	2	1	2	2	5	2	3	...	...	...	...	...	...
Catarrhal jaundice . . .	2	1	1	...	...	2	...	...	...	...	...	...	1	1	...	...	...	...	...	...
Obstructive jaundice . . .	10	7	3	...	...	...	...	...	4	4	2	...	...	6	4	...	...	...	...	...
Enlargement of liver . . .	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hydatid of liver . . .	2	1	1	...	...	...	...	1	...	1	...	1	1	...	...	...	...	...	...	...
Abscess of liver . . .	3	3	...	...	...	...	...	2	...	1	...	...	...	1	2	...	...	...	...	...
Syphilitic disease of liver . . .	1	1	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...
Malignant disease of liver . . .	2	...	2	1	...	...	...	...	...	1	...	...	2	...	...	...	...	...	...	...
4. Various.																				
Cyst of pancreas . . .	1	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...
Malignant disease of pancreas . . .	4	3	1	...	...	...	...	...	1	1	2	1	...	1	2	...	...	...	...	...
Abdominal tumour . . .	15	6	9	...	1	...	1	2	7	3	1	1	3	10	1	...	...	...	...	...
Ascites . . .	4	1	3	...	...	1	3	...	...	...	...	...	1	1	1	1	...	...	...	...
VII. DISEASES OF THE GENITO-URINARY SYSTEM.																				
Acute nephritis. . .	17	6	11	2	2	3	6	4	...	...	...	5	1	5	4	2	...	...	...	...



*continued.*

Cured		Re- lieved		Unre- lieved		Died		REMARKS.
M	F	M	F	M	F	M	F	
		8	17			1	5	3 Of non-fatal cases: ascites in 15 (14 tapped), albuminuria in 12, bronchitis 5, pericarditis in 1, mitral incompetence in 4, epistaxis in 1, bleeding from gums in 1, hæmatemesis in 1, hæmaturia 1, petechial eruption in 2, marked diarrhoea in 1, facial erysipelas in 1, epilepsy in 1, peripheral neuritis in 1. Of fatal cases: no P.M. in 1; in all others ordinary multilobular cirrhosis; ascites in 4 (3 tapped), coma in 2, hæmatemesis in 1, phthisis in 1, old pericarditis in 1, adherent pleuræ and mitral obstruction in 1, left hydronephrosis in 1, hæmorrhages in lung and beneath pericardium in 1.
3	4		2			1		Colic in 8, jaundice in 2, obstruction of cystic duct in 1, which was subsequently relieved by operation on the surgical side. 1 case doubtful, ? floating kidney.
1	1							
		5	2	2		1		Spleen enlarged in 3. Cirrhosis of liver suspected in 4, and malignant disease probable in 6.
						1		Right lobe only; cause not determined.
		1	1					In 1 extensive hydatid disease of peritoneum in addition; other transferred to surgical side and subsequently died after operation.
				1		2		Tropical in fatal cases. Operation in both; in one right lung invaded, and sudden death during irrigation; in other three intercommunicating abscesses drained through pleura, spreading pleurisy. See Special Abstract.
		1						Gummata of liver and syphilitic disease of testis.
						1	1	Both explored. Fatal case in infant; large sarcoma of right lobe.
						1		Transferred to surgical side.
						3	1	Carcinoma in all, obstructive jaundice in 3, distended gall-bladder in 3, liver infiltrated with new growths in 2, secondary growths in pleura in 1. See Special Abstract.
		3		3	8		1	Ascites and paracentesis in 2. Possibly in 1 renal, in 1 tuberculous, and in rest malignant of indeterminate origin. No P.M. on fatal case.
		1	3					In 2 possibly cirrhosis of liver, one of these being associated with blood-stained pleurisy. In 1 (admitted twice) albuminuria, mitral incompetence (?), and later pericarditis and hydrothorax.
2	3	3	5			1	3	No evidence of scarlet fever in any. Of fatal cases: apical pneumonia in 1, left purulent pleurisy in 2, aortic and mitral disease with small ovarian abscess in 1.

TABLE III—

DISEASE.	Number of cases.			Age.							Duration of residence.									
	Total.	M.	F.	Under 5	5-10	20	30	40	50	Above 60	Under 1 week.	Wks 1-2	Wks 2-4	Mths 1-2	Mths 2-4	Mths 4-6	Mths 6-9	Mths 9-12	Above 1 year.	
VII. DISEASES OF THE GENITO-URINARY SYSTEM— <i>continued.</i>																				
Chronic nephritis . . .	53	43	10	...	1	5	7	7	12	12	9	8	10	16	13	4	...	1	1	...
Tuberculosis of kidney . .	3	1	2	...	...	...	2	1	...	...	...	...	1	2	...	...	...	...	...	...
Malignant disease of kidney	1	...	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...
Hydronephrosis . . .	2	...	2	...	...	...	2	...	...	...	...	...	1	1	...	...	...	...	...	...
Pyonephrosis . . .	2	...	2	...	...	1	...	...	...	1	...	...	...	1	1	...	...	...	...	...
Perinephritic abscess . . .	1	1	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Moveable kidney . . .	3	...	3	...	...	...	2	...	1	...	...	...	...	2	...	1	...	...	...	...
Renal colic . . .	9	4	5	...	...	1	1	5	1	1	...	3	1	4	1	...	...	...	...	...
Paroxysmal hæmoglobin- uria . . .	2	2	...	...	...	1	...	1	...	...	...	...	...	2	...	...	...	...	...	...
Hæmaturia . . .	4	4	...	...	2	1	1	...	...	...	2	1	...	1	...	...	...	...	...	...
Pyuria . . .	2	1	1	...	...	...	...	...	1	...	1	...	2	...	...	...	...	...	...	...
Cystitis . . .	1	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...
Gonorrhœa . . .	1	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...
VIII. DISEASES OF THE NERVOUS SYSTEM.																				
Acute meningitis . . .	4	2	2	3	1	...	...	...	...	...	3	1	...	...	...	...	...	...	...	...
Tuberculous meningitis . .	14	9	5	6	2	2	1	1	2	...	7	5	1	1	...	...	...	...	...	...
Chronic meningitis . . .	3	2	1	3	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...
Hemiplegia . . .	15	8	7	1	...	6	5	1	2	...	2	3	7	2	1	...	...	...	...	...
Cerebral embolism . . .	2	1	1	...	1	...	1	...	...	...	1	1	...	...	...	...	...	...	...	...

continued.

Cured								Re- lieved	Un- relieved	Died	REMARKS
M	F	M	F	M	F	M	F				
...	...	25	0	...	...	18	4				History of gout in 2, plumbism in 2, alcoholism in 6, syphilis in 1. Of non-fatal cases: bronchitis in 2, pleural effusion in 4, dyspnea in 2, mitral disease in 4, aortic and mitral disease in 1, thrombosis of veins of leg in 1, cirrhosis of liver in 2, renal retinitis in 1, optic atrophy in 1, facial palsy in 1, loss of knee-jerk in 1, epistaxis in 5, ascites in 6, and marked oedema of legs in 7. Of fatal cases: kidneys small and granular in 9, large and pale in 9, large and granular in 3. Cardiac dilation and hypertrophy in 12. Extreme emphysema of lungs in 1, broncho-pneumonia in 1, hydrothorax in 4, ascites in 1, lardaceous liver and spleen in 1, fatty liver in 1, submucous hæmorrhage in colon in 1, carcinoma of pylorus in 1, and of liver in 1. In 1 no P.M.
...	...	2	1	...	...						Tubercle of prostate in 1, of lungs in 1, of urinary bladder in 1.
...	...			1	...						Cystic and carcinomatous kidney subsequently excised on surgical side.
...	...	2		...	...						Subsequent incision and drainage in 1 case.
...	...			2	...						Inspissated pus around left kidney; cause not ascertained.
...	...	3		...	...	1	...				Small calculi subsequently passed by urethra in 2 cases. Transfer to surgical side in 1 case.
1	...	1	...	...	...						
3	...	1	...	...	...						Oxaluria in 1, contusion of kidney in 2.
...	...	1	...	...	...	1	...				Origin obscure. No P.M. on fatal case.
...	...			1	...						Cystitis and prostatic abscess.
1	...			...	...						Admitted with fever.
...	...	2	2	...	...						Secondary to ear disease in 3. In other associated with pus in knee and elbow-joints. See also "Disease of ear."
...	...	9	5	...	...						Tubercle of lungs in 4, broncho-pneumonia in 1, tuberculous mass in cerebellum in 3, and in pons in 1. Caseous bronchial glands in 4. In 1 no P.M. See also "General tuberculosis."
1	...	1	...	...	...	1	...				No P.M. on fatal case.
...	1	6	4	2	1	...	1				Right sided in 13, with aphasia in 3, and paralysis of left third nerve in 1; left sided in 2. History of syphilis in 6, and probability of it in 2 more, alcoholism in 2, trauma in 1. Epileptiform fits in 1. No P.M. on fatal case.
...	...	1	...	...	...	1	...				Aortic and mitral disease with right hemiplegia in non-fatal case. In fatal case malignant endocarditis, and plugging of right middle and anterior cerebral arteries.

TABLE III—

DISEASE.	Number of cases.			Age.								Duration of residence.									
	Total.	M.	F.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	Above 60	Under 1 week.	Wks 1-2	Wks 2-4	Mths 1-2	Mths 2-4	Mths 4-6	Mths 6-9	Mths 9-12	Above 1 year.	
VIII. DISEASES OF THE NERVOUS SYSTEM—continued.																					
Cerebral hæmorrhage . . . . .	10	9	1	..	1	...	...	1	4	4	..	6	...	2	1	1	...	...	...	...	
Intracranial tumour . . . . .	12	7	5	2	2	3	2	1	1	1	...	1	1	3	5	...	1	1	...	...	
Cerebral syphilis . . . . .	6	6	...	...	...	1	2	3	...	...	...	1	...	1	2	2	...	...	...	...	
Headache . . . . .	4	3	1	1	...	1	1	1	...	...	...	2	...	2	...	...	...	...	...	...	
Thrombosis of basilar artery . . . . .	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	
Thrombosis of vertebral artery . . . . .	1	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	
Ophthalmoplegia . . . . .	2	2	...	...	...	...	...	1	...	1	...	...	...	1	1	...	...	...	...	...	
Bulbar palsy . . . . .	2	2	...	...	...	...	...	...	...	2	...	...	...	1	1	...	...	...	...	...	
Hydrocephalus . . . . .	1	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	
Obscure cerebral disease . . . . .	1	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	
Vertigo . . . . .	1	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	
Post-hemiplegic chorea . . . . .	1	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	
Tetany . . . . .	1	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	
General paralysis . . . . .	10	9	1	...	...	...	1	1	3	1	1	3	3	2	...	2	...	...	...	...	
Melancholia . . . . .	4	2	2	...	...	1	3	...	...	...	...	2	...	2	...	...	...	...	...	...	
Acute mania . . . . .	1	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	
Idiocy . . . . .	1	...	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	
Dementia . . . . .	3	3	...	...	1	1	...	1	...	...	...	...	1	2	...	...	...	...	...	...	
Chorea . . . . .	26	9	17	1	9	15	1	...	...	...	...	1	7	13	5	...	...	...	...	...	
Hysteria . . . . .	39	5	34	...	10	13	10	4	...	2	...	3	11	9	8	8	...	...	...	...	
Epilepsy . . . . .	15	10	5	...	1	4	3	3	3	1	...	5	1	8	1	...	...	...	...	...	
Infantile convulsions . . . . .	2	2	...	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	
Myelitis . . . . .	5	3	2	...	...	1	2	1	1	...	...	...	...	1	2	1	...	1	...	...	
Ataxic paraplegia . . . . .	1	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	



continued.

Cured		Re- lieved.		Unre- lieved.		Died		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
...	...	4	...	...	...	5	1	Right cerebral hemisphere the seat of hæmorrhage in 2, left in 6. In 4 of the latter cases the blood burst into the ventricles. Primary ventricular hæmorrhage in 1, and in 1 (a boy) hæmorrhage over the right motor area associated with meningitis over cerebellum, and vegetative aortic and mitral disease. Right hemianæsthesia in 1, left in 1, aphasia in 1. In 4 fatal cases: interstitial nephritis, and in 1 hyperpyrexia.
...	...	3	1	...	1	4	3	Of fatal cases: growth springing from left petrous bone in 1. Gliomata of medulla and cord 1, of pons 1, of cerebellum 1, of left temporo-sphenoidal lobe 1, of left frontal lobe 2. See also Special Abstracts.
...	...	4	...	1	...	1	...	In fatal cases: a smooth-walled cavity in frontal lobe, gummata in cauda equina, and suppurative nephritis. For other cases see "Hemiplegia," "Ophthalmoplegia," and "Basilar thrombosis."
1	1	2	...	...	...	...	...	Of syphilitic origin.
...	...	...	1	...	...	...	...	See Special Abstract.
...	...	1	...	1	...	...	...	History of syphilis in both. Considerable improvement in 1.
...	...	...	...	2	...	...	...	
...	...	...	...	1	...	...	...	P.M.—Extreme distension of ventricles and thinning of calvaria.
...	...	1	...	...	...	...	...	Probably Menière's disease.
...	...	...	1	...	...	...	...	Complicated by phthisis and hæmoptysis. The man with the "mad arm" (Dr. Bristowe's case).
1	...	...	...	...	...	...	...	
...	3	...	6	1	...	...	...	
...	1	...	2	1	...	...	...	Suicidal tendency in 1. Pregnancy in 1.
...	...	...	...	1	...	...	...	
...	...	...	...	1	...	...	...	
...	...	3	...	...	...	...	...	Followed head injury in 1, and in 1 syphilis.
4	15	4	2	1	...	...	...	First attack in 15, second in 6, third in 3, later in 2. Rheumatism or history of it in 7, chorea and rheumatism in family in 2, pregnancy in 1, attributed to fright in 2. Evidence of mitral disease in 10. Left hemichorea in 1.
2	20	2	11	1	3	...	...	Convulsions in 5, paraplegia in 4, hemiplegia and hemianæsthesia in 1, loss of power and sensation in leg in 1, contracted hand in 2, aphonia in 2, hemianæsthesia in 2, anæsthesia of legs in 1, vomiting in 7, cough in 1, nephralgia in 1, œdema of hands in 1.
...	...	6	3	2	2	2	...	Delusions in 1, mania in 2. Of fatal cases: in 1 status epilepticus; for other see Special Abstracts.
1	...	...	...	...	...	1	...	
...	...	3	1	...	...	...	1	In fatal case: lower dorsal myelitis, aortic valvular disease, thrombosis of veins of leg, cystitis and pyelitis.
...	...	...	...	1	...	...	...	Extension to arms.

TABLE III—

DISEASE.	Number of cases.			Age.								Duration of residence.									
	Total.	M.	F.	Under 5	5-10	20	30	40	50	60	Above 60	Under 1 week.	Wks 1-2	Wks 2-4	Mths 1-2	Mths 2-4	Mths 4-6	Mths 6-9	Mths 9-12	Above 1 year.	
VIII. DISEASES OF THE NERVOUS SYSTEM—continued.																					
Paraplegia . . . . .	8	4	4	...	2	1	1	1	...	1	2	2	1	...	3	1	1	...	...	...	
Lateral sclerosis . . . . .	1	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	
Disseminated sclerosis . . . . .	2	2	...	...	1	...	...	...	...	1	...	...	...	2	...	...	...	...	...	...	
Infantile paralysis . . . . .	2	1	1	1	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	
Tabes dorsalis . . . . .	3	3	...	...	...	...	...	1	1	1	...	...	2	1	...	...	...	...	...	...	
Progressive muscular atrophy . . . . .	2	1	1	...	...	...	...	1	...	1	...	...	2	...	...	...	...	...	...	...	
Peripheral neuritis . . . . .	3	...	3	...	...	...	...	2	1	...	...	...	...	2	1	...	...	...	...	...	
Head jerking . . . . .	1	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	
Nystagmus . . . . .	1	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	
Sciatica . . . . .	5	4	1	...	...	1	1	3	...	...	...	...	1	2	1	...	...	...	1	...	
Neuralgia . . . . .	2	1	1	...	...	...	1	...	1	...	...	...	1	1	...	...	...	...	...	...	
Obscure . . . . .	1	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	
IX. POISONING.																					
Alcoholism—																					
(1) Paralysis . . . . .	7	5	2	...	...	...	2	3	2	...	...	...	1	...	1	5	...	...	...	...	
(2) Intoxication . . . . .	4	3	1	...	...	...	1	1	1	...	1	1	2	1	...	...	...	...	...	...	
Plumbism . . . . .	11	11	...	...	...	...	4	3	4	...	...	3	4	3	1	...	...	...	...	...	
Opium—																					
(1) Morphinomania . . . . .	3	3	...	...	...	...	2	1	...	...	...	...	1	1	1	...	...	...	...	...	
(2) Acute poisoning . . . . .	2	2	...	1	...	...	...	...	1	...	...	2	...	...	...	...	...	...	...	...	
Carbolic acid . . . . .	3	...	3	...	1	2	...	...	...	...	...	1	2	...	...	...	...	...	...	...	
Oxalic acid . . . . .	1	...	1	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	
Hydrochloric acid . . . . .	1	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	
White precipitate . . . . .	1	...	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	
Chronic mercurial . . . . .	1	...	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	
Salts of tartar . . . . .	1	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	
Belladonna . . . . .	2	...	2	...	...	...	1	1	...	...	...	2	...	...	...	...	...	...	...	...	
Paraffin . . . . .	1	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	
Ptomaine . . . . .	4	3	1	...	1	2	1	...	...	...	...	2	...	2	...	...	...	...	...	...	

*continued.*

Cured		Re- lieved		Unre- lieved		Died.		REMARKS.
M	F	M	F	M	F	M	F	
1	...	3	3	...	1	...	...	Caries of spine in 5, carcinoma of vertebra secondary to breast in 1. Possibly hysterical in 1. Sudden transitory paraplegia with lumbar pain in 1.
...	...	...	...	1	...	...	...	History of syphilis and Malta fever.
...	...	1	...	1	...	...	...	
...	...	1	...	1	...	...	...	
...	...	1	...	1	1	...	...	In fatal case: disorganisation of knee-joint and chronic renal disease. Albuminuria in 1; other said to be subject to choking fits, but none whilst under observation.
...	...	1	...	1	1	...	...	Cause unascertained. In 1 ataxy and floating kidney.
...	...	...	...	1	...	...	...	Transferred to surgical side.
1	...	3	...	...	1	...	...	Contracture and wasting of limb in 1. One subsequently proving fatal was found to be due to pressure by lymphadenomatous glands.
...	...	1	1	...	...	...	...	Both facial. The man had 3 times previously been operated upon.
...	...	...	...	1	...	...	...	Weakness and anæsthesia of right leg below the knee.
2	1	3	...	...	1	...	...	Tertiary syphilis in 1, phthisis in 1, mania in 1.
3	1	...	...	...	...	...	...	
9	...	2	...	...	...	...	...	1 plumber, 5 painters, 1 potman, 1 hairdresser, 1 whitesmith, 1 glazier, and 1 newsagent. Colic in 10, wrist-drop in 2, mental condition resembling general paralysis in 1, gout in 1, albuminuria in 1.
3	...	...	...	...	...	...	...	
2	...	...	...	...	...	...	...	1 suicidal, 1 accidental.
...	3	...	...	...	...	...	...	2 suicidal, 1 accidental. In 2 stupor and collapse, in 1 scarlatini-form eruption, in 1 olive green urine.
...	...	...	...	...	...	1	...	Corrosion of mucous membrane of mouth, tongue, epiglottis, and œsophagus. Intense inflammation and considerable destruction of stomach wall, no perforation. Slight duodenal injury.
...	1	...	...	...	...	...	...	Suicidal.
...	1	...	...	...	...	...	...	Suicidal. This patient swallowed camphorated chloroform in addition.
...	1	...	...	...	...	...	...	
18	...	...	...	...	...	...	...	Suicidal. Much œdema of fauces.
...	2	...	...	...	...	...	...	1 accidental, 1 suicidal. Liniment in each case.
...	1	...	...	...	...	...	...	Suicidal. Taken in conjunction with iodine liniment and permanganate of potash. Acute nephritis.
3	1	...	...	...	...	...	...	Due to ice cream in 1, and to fish in 1.





*continued.*

Cured								Re- lieved.	Unre- lieved.	Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
6	18	1	3	...	...	...	...	...	...	...	...	
2	4	...	...	...	...	...	...	...	...	...	...	3 suicidal, all in females, and in 1 followed by pneumonia.
...	1	...	1	...	...	1	...	...	...	1	...	Meningitis in fatal case. See also "Meningitis."
6	4	1	1	2	7	3	...	...	...	...	...	Includes abscess, periostitis, &c. Of fatal cases: fractured base and subdural hæmorrhage in 1, extravasation of urine in 1; no P.M. in 1.
...	...	1	...	1	...	...	...	...	...	...	...	
9	15	6	4	5	3	...	1	...	...	...	...	In fatal case: emaciation only found.
...	1	...	...	...	...	...	...	...	...	...	...	
...	1	...	...	...	...	...	...	...	...	...	...	After miscarriage.
...	...	...	...	...	2	...	...	...	...	...	...	
...	...	...	...	...	1	...	...	...	...	...	...	Transferred to Obstetrical Department.
...	1	...	...	...	...	...	...	...	...	...	...	
...	...	3	...	3	...	1	...	...	...	...	...	3 transferred to Obstetrical Department. In fatal case a ruptured pyosalpinx.
...	1	...	...	3	...	...	...	...	...	...	...	In case treated to a termination, at operation was found a twisted pedicle, with hæmorrhage between the layers of the broad ligament. Transfer to surgical side in 3.
443	449	295	271	68	67	202	121	...	...	...	...	
892	566	135	323	...	...	...	...	...	...	...	...	
1916								...	...	...	...	



TABLE IV—continued.

DISEASE.	Total.		Age.									Mor- tality per cent.
	No. dis- charged.	No. died.	Under 2	2-5	5-10	10-20	20-30	30-40	40-50	50-60	Above 70	
4. DISEASES OF THE DUCTLESS GLANDS.												
Exophthalmic goitre . . . . .	8	1	...	...	...	...	...	1	...	...	...	11.11
Addison's disease . . . . .	...	1	...	...	...	...	...	1	...	...	...	...
5. DISEASES OF THE DIGESTIVE ORGANS.												
Noma . . . . .	...	1	...	1	...	...	...	...	...	...	...	...
Malignant disease of œsophagus . . . . .	6	3	...	...	...	...	...	...	2	...	1	33.33
Gastric ulcer . . . . .	46	6	...	...	...	3	1	1	...	1	...	11.53
Dilated stomach . . . . .	3	1	...	...	...	...	...	...	1	...	...	25
Malignant disease of stomach . . . . .	4	1	...	...	...	...	...	1	...	...	...	20
Duodenal ulcer . . . . .	1	1	...	...	...	...	...	...	1	...	...	50
Diarrhœa and vomiting . . . . .	15	14	13	1	...	...	...	...	...	...	...	48.2
Diarrhœa . . . . .	17	4	3	...	...	...	...	1	...	...	...	19.01
Intussusception . . . . .	...	3	2	...	...	...	...	1	...	...	...	...
Internal strangulation . . . . .	...	4	...	2	1	...	1	...	...	...	...	...
Other forms of obstruction . . . . .	2	3	...	...	...	1	...	...	1	1	...	60
Malignant disease of intestine . . . . .	6	3	...	...	...	1	...	...	2	...	...	33.33
Inflammation or perforation of vermiform appendix . . . . .	34	10	...	3	3	2	...	...	2	...	...	22.72
Acute peritonitis . . . . .	1	3	...	1	...	...	1	1	...	...	...	75
Tuberculous peritonitis . . . . .	3	5	2	1	1	1	...	...	...	...	...	62.5
Cirrhosis of liver . . . . .	26	8	...	...	...	1	...	3	2	1	1	23.53
Abscess of liver . . . . .	1	2	...	...	...	...	...	1	...	1	...	66.6
Malignant disease of liver . . . . .	1	1	1	...	...	...	...	...	...	...	...	50
Malignant disease of pancreas . . . . .	...	4	...	...	...	...	...	...	1	1	2	...
6. DISEASES OF THE GENITO-URINARY SYSTEM.												
Acute nephritis . . . . .	13	4	1	...	1	...	2	...	...	...	...	23.52
Chronic nephritis . . . . .	31	22	...	...	...	1	3	3	4	7	4	41.50
Perinephritic abscess . . . . .	...	1	1	...	...	...	...	...	...	...	...	...
Pyuria . . . . .	...	1	...	...	...	...	...	...	...	1	...	...
Cystitis . . . . .	...	1	...	...	...	...	...	...	...	1	...	...
7. DISEASES OF THE NERVOUS SYSTEM.												
Acute meningitis . . . . .	...	4	2	1	1	...	...	...	...	...	...	...
Tuberculous meningitis . . . . .	...	14	2	5	1	3	1	1	1	...	...	...
Chronic meningitis . . . . .	2	1	1	...	...	...	...	1	...	...	...	33.33
Hemiplegia . . . . .	15	1	...	...	...	...	...	1	...	...	...	6.25
Cerebral embolism . . . . .	1	1	...	...	1	...	...	...	...	...	...	50
Cerebral hæmorrhage . . . . .	4	5	...	...	1	...	...	1	3	...	...	55.55
Intracranial tumour . . . . .	5	7	...	2	1	1	1	1	2	...	...	58.33
Cerebral syphilis . . . . .	5	1	...	...	...	1	...	...	...	...	...	16.66

TABLE IV—*continued.*

DISEASE.	Total.		Age.								Mortality per cent.		
	No. dis- charged	No. died.	Under 2.	2-5	10	20	30	40	50	60		70	Above 70
7. DISEASES OF THE NERVOUS SYSTEM—continued.													
Thrombosis of vertebral artery . . .	...	1	...	...	...	...	...	1	...	...	...	...	...
Hydrocephalus . . . . .	...	1	1	...	...	...	...	...	...	...	...	...	...
Epilepsy . . . . .	13	2	...	...	1	...	1	...	...	...	...	...	13·33
Infantile convulsions . . . . .	1	1	1	...	...	...	...	...	...	...	...	...	50
Myelitis . . . . .	4	1	...	...	...	1	...	...	...	...	...	...	20
Tabes dorsalis . . . . .	2	1	...	...	...	...	...	...	1	...	...	...	33·33
8. POISONING.													
Oxalic acid . . . . .	...	1	...	...	...	...	...	...	1	...	...	...	...
9. SURGICAL AND MISCELLANEOUS.													
Disease of ear . . . . .	2	1	...	1	...	...	...	...	...	...	...	...	33·33
Extravasation of urine . . . . .	...	1	...	...	...	...	...	1	...	...	...	...	...
Fractured base of skull . . . . .	...	1	...	...	...	...	...	1	...	...	...	...	...
Starvation . . . . .	...	1	1	...	...	...	...	...	...	...	...	...	...
10. DISEASES OF FEMALE GENERATIVE ORGANS.													
Salpingitis . . . . .	6	1	...	...	1	...	...	...	...	...	...	...	14·28



TABLE V.—Cases of Infectious Disease occurring in the Hospital.

Initials.	Sex.	Age.	Disease for which admitted.	Disease originating in hospital.	Date of onset.	Duration of previous residence in hospital.	Result.	Remarks.
A. T.	F.	25 yrs.	—	Measles	July 23	—	C. Aug. 4	Nurse in Charity Ward.
K. T.	F.	"	—	"	July 22	—	C. " 4	Ditto.
M. C.	F.	21 1/2 yrs.	Diphtheria	"	Oct. 21	95 days	C. Oct. 3	Contracted in Luke Ward.
N. D.	F.	10 mos.	"	"	Oct. 14	31 "	C. " 23	Ditto.
L. T.	M.	14 mos.	Talipes equino-varus	"	Nov. 11	132 days	C. Dec. 1	Contracted in Victoria Ward.
M. A. M.	F.	2 1/2 yrs.	Acute arthritis of hip	Scarlet fever	Nov. 6	6 "	C. Jan. 13	Contracted in Victoria Ward.
W. N.	M.	4 yrs.	Mastoid abscess	"	Nov. 10	4 "	C. " 19	Contracted in Leopold Ward.
S. C.	M.	"	Cervical caries	"	Nov. 6	29 "	C. " 25	Contracted in Victoria Ward.
E. C.	M.	2 1/2 yrs.	Hygroma of chest	"	July 8	30 "	C. Aug. 6	Ditto.
N. E.	F.	25 yrs.	—	"	Sept. 13	—	C. Oct. 28	Nurse in Victoria Ward.
A. T.	F.	"	—	"	Oct. 23	—	C. Dec. 2	Nurse in George Ward.
N. R.	F.	26 yrs.	—	"	Oct. 24	—	C. " 2	Ditto.
E. A.	F.	27 yrs.	—	Influenza	Feb. 19	—	C. Feb. 25	Nurse.
N. C.	F.	"	—	"	Feb. 18	—	C. " 28	Nurse.
F. W.	F.	25 yrs.	—	"	Feb. 27	—	C. Mar. 9	Nurse.
A. R.	F.	26 yrs.	—	"	Mar. 5	—	C. " 12	Nurse.
M. C.	F.	25 yrs.	—	"	Mar. 8	—	C. " 16	Nurse.
E. S.	F.	"	—	"	Apr. 20	—	C. Apr. 30	Probationer.
H. A. D.	M.	"	—	"	May 23	—	C. May 28	House surgeon.
E. A. S.	M.	"	—	"	Oct. 26	—	C. Nov. 1	House surgeon.
W. G. S.	M.	"	—	"	Nov. 2	—	C. " 8	House surgeon.
A. N.	F.	29 yrs.	—	"	Nov. 18	—	C. Dec. 1	Ward-maid.
M. D.	F.	11 mos.	Phthisis	Diphtheria	May 1	31 days	C. May 31	Contracted in Christian Ward.
N. D.	F.	25 yrs.	—	Enteric fever	Jan. 25	—	C. Apr. 18	Nurse.

## SPECIAL ANALYSES AND ABSTRACTS.

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### I. GENERAL DISEASES.

#### 1. DIPHTHERIA.

During the year 1895 the antitoxin treatment of diphtheria was adopted in every case, and the results are embodied in the accompanying tables. Up to the end of May serum specially prepared by Dr. Hawkins was used in the majority of the cases; after that month the serum issued by the British Institute of Preventive Medicine was substituted. The mode of preparation of the serum in each case was similar, and in all instances before injection the skin was washed with either carbolic acid or corrosive sublimate, and the syringe with its needle sterilised by boiling. The injections were made in the flank.

Table 1 shows the number of cases, day of disease (so far as could be ascertained), deaths, and percentage mortality of those patients under treatment during the year. Treatment was in each case commenced immediately after admission. Following the example of the Asylums Board a similar table dealing with the cases under treatment in 1894 has been prepared, during which year, with three exceptions omitted in the table, no antitoxin was used.

The clinical diagnosis of diphtheria did not receive bacteriological confirmation in 5·4 per cent. of the cases included in Table I. The bacteriological examination in non-fatal cases showed a mixed culture in 38 and a pure culture in 37 instances, whilst the fatal cases yielded a mixed culture in 8 and a pure culture in 9 instances.

TABLE I.—Cases treated with antitoxin in 1895.

Ages.	Duration of disease.										Mortality per cent.		
	1 day.		2 days.		3 days.		4 days.		5 or more days.			Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.			
Under 1 year	...	...	2	1	...	...	2	1	3	2	7	4	57.14
1-2 years	1	...	2	1	5	2	1	...	6	3	15	6	40
2-3 "	...	...	2	...	6	1	2	...	7	2	17	3	17.64
3-4 "	2	1	3	1	7	2	3	1	8	3	23	8	34.78
4-5 "	...	...	4	...	3	1	3	...	3	...	13	1	7.69
5-10 "	1	...	5	...	6	...	6	...	6	2	24	2	8.33
10-15 "	...	...	1	...	1	...	1	...	3	2	6	2	33.33
15-20 "	...	...	...	...	1	...	1	...	...	...	2	...	...
20 and upwards.	...	...	...	...	3	...	...	...	1	...	4	...	...
Total . . . .	4	1	19	3	32	6	19	2	37	14	111	26	...
Mortality per cent. . .	.	25	...	15.78	...	18.75	...	10.52	...	37.83	...	23.42	...

TABLE II.—*Cases under treatment in 1894. No antitoxin used.*

Ages.	Duration of disease.										Mortality per cent.
	1 day.		2 days.		3 days.		4 days.		5 or more days.		
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
Under 1 year	1	1	...	...	...	...	1	...	1	1	66.66
1—2 years	3	1	1	...	1	1	3	2	6	4	57.14
2—3 "	3	2	3	1	3	...	1	...	8	7	55.55
3—4 "	...	...	3	...	2	2	1	1	6	2	41.66
4—5 "	2	1	6	3	1	...	2	1	2	1	46.15
5—10 "	5	2	8	3	6	2	3	...	9	2	29.03
10—15 "	1	...	1	...	2	1	1	...	...	...	20
15—20 "	...	...	...	...	1	...	...	...	1	1	15
20 and upwards	6	...	...	...	1	...	1	1	...	...	12.5
Total . . . . .	21	7	22	7	17	6	13	5	33	18	43
Mortality per cent. . . . .	...	33.33	...	31.81	...	35.29	...	38.46	...	54.54	40.56
Difference in favour of 1895 . . . . .	...	833	...	1607	...	1652	...	2794	...	1671	17.14



The general reduction of mortality and the reduction at different ages during 1895 is calculated in Table III, whilst Table IV shows the proportionate number of patients at different ages admitted during 1894 and 1895.

TABLE III.

Age.	Antitoxin cases, 1895.			Cases not treated with antitoxin, 1894.			Difference in mortalities, 1894 and 1895.
	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.	
Under 5 years	75	22	29·33	60	31	51·66	22·33
" 10 "	99	24	24·24	91	40	43·95	19·71
" 15 "	105	26	24·76	96	41	42·7	17·94
All ages	111	26	23·42	106	43	40·56	17·14

Average mortality for 10 years preceding 1895 = 49·8 per cent.

TABLE IV.—*Proportionate number of patients at different age periods expressed as percentages of total admissions.*

Age.	1895.	1894.
Under 5 years	67·57	56·6
5—10 "	21·62	29·24
10—15 "	5·4	4·71
Over 15 "	5·4	9·43

The cases in which the larynx was involved and also those in which tracheotomy was performed are compared in the two following tables:

TABLE V.—*Laryngeal cases in 1895 and 1894 compared.*

Ages.	1895.			1894.		
	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.
Under 1 year	4	2	66·66	4	3	75
1—2 years	10	6	85·71	11	10	90·9
2—3 "	10	3	27·27	12	7	58·33
3—4 "	12	3	25	6	4	66·66
4—5 "	9	1	11·11	7	3	42·85
5—10 "	10	2	33·33	16	8	50
10—15 "	3	2	66·66	...	...	...
15 and upwards	...	...	...	2	2	100
Total . . .	58	19	37·25	58	37	63·79
Percentage of tracheotomies 87·93.				Percentage of tracheotomies 91·37.		

TABLE VI.—*Tracheotomies in 1895 and 1894 compared.*

Ages.	1895.			1894.		
	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.
Under 1 year	3	2	66·66	3	2	66·66
1—2 years	7	6	85·71	11	10	90·9
2—3 "	11	3	27·27	12	7	58·33
3—4 "	12	3	25	4	3	75
4—5 "	9	1	11·11	7	3	42·85
5—10 "	6	2	33·33	14	8	57·14
10—15 "	3	2	66·66	...	...	...
15 and upwards	...	...	...	2	2	100
Total . . .	51	19	37·25	53	35	66·03

In no instance during 1895 did the larynx become involved after admission, whilst in 1894 this occurred in 4 cases.

The chief complications during the two years in question are tabulated and compared in Table VII.

TABLE VII.—*Complications arising in 1895 and 1894.*

Complication.	1895.		1894.	
	Number of cases.	Percentage.	Number of cases.	Percentage.
Albuminuria . . .	50	47·27	30	28·3
Nephritis . . .	3	2·7	1	·94
Paralysis . . .	24	21·6	15	14·15
Broncho-pneumonia	18	16·2	14	13·2

It will be observed that the diminution of mortality in 1895 was accompanied by a considerable increase in the incidence of complications.

Of complications probably due to the use of the antitoxic serum a rash was the most frequent. It usually appeared in the form of an urticaria or of a patchy erythema, but was sometimes scarlatiniform and rarely morbilliform. In several instances it was definitely noted as commencing first near the site of injection. Joint pains occurred in a small percentage of the cases, and were usually not severe, but in one or two instances they were accompanied by slight effusion, and caused much discomfort. All complications are tabulated below.

TABLE VIII.

Rash in 58 cases = 54·9 per cent.

Joint pains in 8 cases = 7·2 per cent.

Fever without rash or pains 13 cases = 11·71 per cent.

Abscess at site of injection 2 cases = 1·8 per cent.

TABLE IX shows the amount of antitoxin used and the dosage.

Amount given.	Number of patients.	Number of injections.	Average dose.	Average number of injections.	Average amount per case.
Fatal cases 675 c.c.	26	64	10·5 c.c.	2·46	25·96 c.c.
Recoveries 1046 c.c.	85	120	8·7 c.c.	1·41	12·3 c.c.
All cases 1721 c.c.	111	184	9·3 c.c.	1·6	15·5 c.c.

The average persistence in the exudate, in days, after treatment was commenced, in those cases which recovered during the year 1895 = 4·3.

„ „ „ 1894 = 6·5.

The average duration of life, in days, after admission, in fatal cases during 1895 was 9·15 days.

„ 1894 „ 6·63 days.

## 2. ENTERIC FEVER.

During the past year the number of cases of enteric fever treated to a termination was 64 and the deaths were 8, giving a mortality of 12·5 per cent., which contrasts favorably with a percentage mortality of 25 last year.

The admissions were distributed as follows:—January, 12 (2 deaths); February, 5; March, 1; April, 1; May, 1; June, 2; July, 3 (2 deaths); August, 3 (1 death); September, 6; October, 11 (1 death); November, 11 (3 deaths); December, 8 (1 death).

Of these admissions 16 remained in hospital in 1896, and subsequently terminated in recovery, whilst included in the 64 cases mentioned above as treated to a termination were 16 admitted during 1894, *i. e.* October, 1; November, 6; and December, 9. No deaths occurred amongst these.

The average residence of each case was 45·4 days; of those which terminated in recovery, 49·9 days; and of those which terminated fatally, 13·62 days.

The details as to age and sex incidence are given in Table III.

Of the deaths 1 resulted from perforation of the bowel, which occurred, so far as could be ascertained, on the 23rd day of the disease. Death in the remaining

7 instances was due to exhaustion and cardiac failure, being associated with severe diarrhoea in 2, acute nephritis and broncho-pneumonia in 1, œdema of lungs in 1, and hæmorrhage from the bowel in 2. The hæmorrhage in one case was associated with chronic nephritis, and in the other with epistaxis and hæmatemesis. In one case there was reason to believe that the fatal issue occurred during a relapse.

Twenty-three cases came under observation in the 1st week of the disease, 25 in the 2nd, 15 in the 3rd, and 1 later.

The onset in 3 cases was quite sudden, and in 1 which proved fatal the symptoms were those of acute nephritis.

A profuse eruption was present in 33, a scanty eruption in 21 cases. In 4 the eruption was doubtful, and in 6 was not noticed. In the case above mentioned as complicated by acute nephritis a papular eruption was present on the extremities.

Splenic enlargement was detected in 51 cases, doubtful in 2, and absent in 11. In 3 of the 11 cases in which it was absent the patient was admitted late in the disease, *i. e.* at the end of the third week or later.

In 40 cases the tongue was described as typical. Diarrhoea was present in 25 cases, and constipation in 24. Vomiting occurred during the course of the disease in 11 cases, and in one fatal instance hæmatemesis was associated with hæmorrhage from the bowel.

In 5 cases hæmorrhage from the bowel occurred, the earliest instance being on the 17th and the latest on the 24th day of the disease. In 1 case the hæmorrhage was recurrent. Epistaxis was noted in 5 cases.

Initial bronchitis occurred in 1 case, whilst after the second week it was more or less severe in 26. Pleurisy complicated 2 cases, pericarditis 1, and broncho-pneumonia 1 (fatal case).

Transient albuminuria was present in 12 cases, and albumen was also observed in 4 fatal cases, in 1 there being hæmorrhagic nephritis. Retention of urine occurred in 1 case.

Thrombosis of veins of leg occurred twice, periostitis of tibia twice, necrosis of olecranon once, and suppurative otitis media four times, being once associated with an aural polyp.

Abdominal pain was present in 19 cases, and marked abdominal distension in 5.

Headache was a prominent symptom in 40 cases, delirium occurred in 20, in 1 of these assuming an acute maniacal form.

The temperature exceeded 104° F. in 35 cases, and in 1 during rigor was said to run up to 110° F.; this case recovered. The duration of fever whilst under observation was from 2 to 48 days, the average observed period being 14·8 days, and the average maximum temperature 103·8°.

Single rigor occurred during the progress of the disease in 3 instances on the 22nd, 23rd, and 27th days. Repeated rigors occurred in 3 instances, commencing on the 17th, 20th, and 32nd days. In 1 case they were associated with thrombosis of the femoral vein.

True relapse occurred in 6 instances, on the 21st, 28th, 30th, 32nd, 34th, and (?) 52nd days respectively. The duration of the relapse varied from 8 to 20 days, the average being 13·66 days. The maximum temperature during relapse



varied from 101·8° to 102·4° F., the average maximum being 103·7° F. In 5 cases during relapse a fresh crop of rose spots was observed, and in 5 a fresh enlargement of the spleen, whilst diarrhoea was present in 3.

In one instance the fever complicated pregnancy at the sixth month; abortion did not occur. In 1 instance gonorrhoea and rheumatism were present.

A history of direct exposure to contagion was obtained in 3 cases, and in 2 of indulgence in oysters and in 1 in mussels a week or two prior to the fever.

The typical ulceration of the small intestine was found in all the fatal cases; the caecum also was ulcerated in 4, and the colon in 4. In 1 case there was considerable matting of bowel, probably the result of peritonitis earlier in life.

### 3. PYÆMIA; ABORTION.

M. A. F.—, æt. 29, female, married, admitted November 13th, died November 27th, 1895. No previous illness with exception of winter cough. No miscarriages; three children living and healthy.

When admitted she was six months pregnant, and complained of abdominal pain with incessant vomiting, of three days' duration. The thoracic viscera appeared normal. The abdomen was somewhat resistant, and the uterus formed a median tumour reaching midway between the umbilicus and the xiphoid cartilage. A small hard mass could also be felt above the uterus in the mid-line, but this afterwards disappeared. The urine contained a trace of albumen, and the temperature was 97° F.

The abdominal pain was relieved by the use of enemata and opium fomentations. Three days after admission the right parotid gland commenced to swell, followed in quick succession by the left; the swellings were very tender, and the right cheek became œdematous. The temperature now varied between 99·4° and 101·4° F. Abortion occurred on November 19th, the presentation being left sacro-iliac, and the child, which was still-born, probably about six months. The parotid glands remained swollen and semi-fluctuating; the urine, which was passed in very small quantities, contained epithelial and granular casts with much albumen, and the bowels were very loose. The patient sank into a typhoid condition, the temperature remaining subnormal. Death took place on November 27th.

*Post-mortem*.—The uterus was as large as a closed fist, and the os patulous; the cavity was lined with firm shaggy clot. The kidneys showed no structural change to the naked eye; the right ureter was dilated almost to its entrance into the bladder. A number of small superficial ulcers were present in the rectum and sigmoid flexure. The right parotid gland was infiltrated with pus. The viscera appeared normal with the above exceptions.

### 4. MYXŒDEMA; EPILEPSY.

E. S.—, waiter, æt. 33, admitted November 13th, died November 16th, 1895. This patient was formerly in hospital in 1892, being a typical example of myxœdema, and was one of the first cases treated by thyroid injection. Very great improvement resulted, and he continued to take thyroid extract after his

discharge. He appears to have had his first fit in the beginning of July, 1895, and another two months later. On each occasion he lost consciousness. His third, and fatal, fit occurred 8 days before admission, when he fell in the street, biting his tongue, losing consciousness, and severely bruising his right cheek.

On admission he still showed signs of myxœdema, his hair being scanty, his features coarse, and his skin very dry. Beyond the bruising above mentioned no sign of injury was detected. He had frequent convulsive seizures, and became violently delirious, necessitating forcible restraint; from expressions he let drop it was inferred that he had been a very heavy drinker. The delirium gave way to coma, and he died 3 days after admission. The temperature was only slightly above normal.

*Post-mortem.*—The thyroid gland was extremely atrophied, the lungs congested and œdematous, and the liver very friable. The supra-renal bodies contained a few calcareous masses and some clusters of bodies resembling miliary tubercles, but the main part of the glands appeared healthy. The scalp tissues were much bruised on the right side, but the skull was not fractured. Innumerable small hæmorrhages were scattered throughout the cerebral hemispheres, chiefly on the left side. The cerebral vessels appeared healthy.

Microscopically the residue of the thyroid consisted of indistinctly fibrillated tissue containing numerous vascular clumps of lymphoid cells; in these clumps in addition were a number of groups of epithelial cells, some arranged in an indefinite glandular fashion, but without a lumen. The liver was highly fatty, and showed signs of early cirrhosis. There was also increase of connective tissue in the kidney, with much epithelial degeneration.

## 5. PURPURA HÆMORRHAGICA.

F. W—, hairdresser, æt. 32, admitted December 19th, died December 30th, 1895.

A brother of the patient had died from phthisis; he had himself contracted syphilis five years ago, and was under treatment as an out-patient with tertiary symptoms. He was a heavy drinker of both beer and spirits.

For five or six months his health had been failing, but he complained of nothing definite until two months before admission, when he experienced pain in the loins and right leg; he was treated for sciatica, but did not improve, and a week before admission his gums began to bleed and an eruption appeared on the body.

When admitted a hæmorrhagic eruption was present, and more or less general, on the neck, chest, abdomen, arms, and legs; there were only a few petechiæ on the hands, feet, and face. The patches varied in colour from a dark red to purple, and in size from a pin's head to a threepenny-piece; there was in addition a large bruise on the front of the right shin. The gums were firm but bleeding slightly at their margins, and submucous petechiæ were observed on the tongue and the palate. The thoracic and abdominal viscera showed no sign of disease, the spleen was not enlarged, there was no albuminuria, the temperature was 99.4° F., and pulse 120 and regular.

Two days after admission the gums were observed to be bleeding more freely

blood was present in considerable quantity in the urine, and epistaxis occurred for the first time. The pulse was 128, and the temperature varied between 99° and 102° F. On December 27th the blood had disappeared from the urine, but albumen was still present; much pain was complained of in the ankles, but there was no visible swelling; the bleeding from the gums continued, and the temperature rose higher, reaching 103·6° F. at times. Death occurred on December 30th.

*Post-mortem*.—The surface of the body was extremely pallid, and in addition to the purpuric eruption there were on the forearm a number of small raised whitish spots, somewhat like colourless urticarial wheals. There were numerous small hæmorrhages into the anterior mediastinal tissues, and on the surface of the heart. The heart was generally dilated and fatty; extreme fatty change was also evident in the liver and kidneys. The spleen was large and diffuent. The apices of the lungs were adherent and showed general fibrosis, with a few small calcareous nodules; there was no recent tuberculosis. The pleuræ contained a few ounces of blood-stained fluid. The tonsils were large, ragged, and of a dark grey colour; they were riddled with numerous small foci of pus. In the anterior mediastinum was a firm yellow tumour about the size of a walnut, with a recent hæmorrhage in its centre.

## 6. PERNICIOUS ANÆMIA.

(i) C. W—, wireworker, æt. 63, admitted November 9th, died November 16th, 1895. The patient, who was of intemperate habits, had suffered some years previously from concussion of the brain and erysipelas. Two years ago he underwent six months imprisonment. His illness commenced a year before admission with repeated epistaxis and languor. On admission to Norwich Hospital early in 1895 he was stated to have had only 12 per cent. of the normal number of coloured discs, but under the use of *Liquor Arsenicalis* and bone marrow tabloids the number increased to 40 per cent. of normal. He left the hospital in April, and immediately began to get worse, losing flesh and strength, and becoming subject to attacks of giddiness, vomiting, and diarrhœa; he complained very much of tingling in the fingers and discomfort in the throat; epistaxis did not recur.

When admitted he was exceedingly pale and thin, stating that he had lost 32 lbs. weight in 6 months. The area of cardiac dulness was slightly increased, and at the apex was a systolic murmur conducted a short distance into the axilla. Physical examination of the lungs and abdomen showed no signs of disease. The left foot was œdematous, and the muscles of the leg were slightly wasted. Numerous small retinal hæmorrhages were present. The skin was not abnormally pigmented. The blood contained 1,370,000 red discs per cubic millimètre; the urine was dark coloured and free from albumen. Pulse 96, of low tension, and regular; temperature subnormal. He was ordered *Liquor Arsenicalis* 3 minims thrice daily. It was noticed that at night his mind wandered, and also his memory was failing. Three days later the dose of arsenic was increased to 5 minims, and 2 oz. of red bone marrow were given daily in addition. The quality of blood did not improve, and stimulants



became necessary on account of pulse failure. Gradually increasing weakness culminated in death on November 18th.

*Post-mortem.*—There was the usual subcutaneous and pericardiac deposit of yellow fat. In each pleural sac was fully half a pint of blood-stained serum; there was also excess of fluid in the pericardium and peritoneum. All the viscera were bloodless except the spleen, which was large and disfluent. The ventricular cavities of the heart were dilated, and the mitral valve incompetent, but not structurally diseased; the myocardium was very fatty. The lungs were emphysematous. Both liver and kidneys gave the iron reaction in a very marked manner, and the liver in addition was very fatty.

(ii) A. E—, female, *æt.* 47, married, admitted January 7th, died January 9th, 1895. The patient's father and brother died from phthisis. She had herself a family of 11, of whom 5 were living; the others died in infancy. Had also two miscarriages. Her illness dated from an attack of influenza in 1893; the history was one of increasing weakness with loss of flesh. A week before admission she took to her bed, suffering much from vomiting and retching.

On admission she was extremely anæmic, the lips being almost bloodless, and the skin of a yellowish tint. With the exception of a few crepitations at the bases the lungs appeared normal; the heart was not enlarged, and a hæmic murmur was present over the pulmonary area. The abdominal viscera appeared healthy; the legs and feet were œdematous. Flame-shaped hæmorrhages were present in each retina. The red discs were not counted, but were evidently much reduced in number, and showed great variation in size and shape; many were nucleated. The temperature was subnormal.

The patient vomited after admission, and lapsing into a condition of stupor died on the second day.

*Post-mortem.*—There was much yellow subcutaneous fat. Each pleural sac contained about 10 ounces of serum, and the lungs were œdematous and slightly emphysematous. The liver gave a very marked iron reaction; the spleen and kidneys reacted in lesser degree; iron was also found in the secretion covering the intestine. The red bone marrow had a laky appearance, and gave no iron reaction. The spleen was large and rather firm. There did not appear to be much fatty change in the viscera.

## 7. ACROMEGALY.

A. T—, female servant, *æt.* 24, single, admitted July 23rd, discharged December 11th, 1895.

Her father is stated to have died from heart disease, and her mother from rheumatic fever. She has one brother and three sisters who are quite healthy, and herself has had no previous illness. An increase in the size of her hands, feet, and face had been noticed for seven months before admission. For at least two years she had suffered from granular ophthalmia, for which she had been treated at St. Bartholomew's Hospital.

When admitted, her hands were much enlarged, being broad in proportion to their length; the carpus was notably involved, and there was no marked change in the finger tips and nails, the fingers being described as only a little flattened,



and the nails as rather broad. The feet were also enlarged, and the great toes particularly so. The enlargement of the face affected chiefly the lower jaw, which was very prominent, but the lower incisors did not project beyond the upper. The soft tissues of the nose and lips were considerably thickened. A kyphotic curve was present in the upper dorsal spine, with some restriction of movement here. There was no evidence of enlargement of thyroid or thymus glands, and with the exception of the presence of a trace of albumen in the urine, no visceral lesion was discovered. The catamenia had been absent for two years. Slight defect of sight, of which the patient complained, was due to corneal opacity and irregular astigmatism; there was no change in the fundi or alteration in the visual fields.

A course of pituitary feeding was undergone from September 17th until November 20th, the quantity taken being gradually increased from  $1\frac{1}{2}$  to 3 glands per diem. The only noticeable result was the production of some pain in the limbs; no alteration in appearance resulted, and the average excretion of urea and the albuminuria remained unaltered. A gain in weight,  $42\frac{1}{2}$  pounds in all, occurred, but this gain continued after cessation of administration of the pituitary bodies.

## II. DISEASES OF THE RESPIRATORY SYSTEM.

### MALIGNANT DISEASE OF LUNG.

H. I. L.—, carman, æt. 32, admitted December 17th, 1894, died March 19th, 1895.

The patient came of a healthy family, and had himself suffered from no serious illness. For three weeks before admission he attended as an out-patient, complaining of pains in the chest, dyspnœa, cough, viscid blood-stained expectoration, and slight swelling of the face. These symptoms were of about two months' duration.

It was found upon examination that over the whole of the right lung resonance was much impaired except above the second rib, where the note was tympanitic; the dull area extended to the left of the middle line in the first and second interspaces for about one inch. Over the sternum and above the second rib on the right side the respiratory murmur was loudly bronchial, as it was also about two inches below the spine of the scapula posteriorly; on this side too the vocal thrill was much impaired, and the vocal resonance below the spine of the scapula distinctly ægophonic. The girth of the chest on the right side was  $21\frac{1}{2}$  inches, on the left  $19\frac{1}{2}$  inches. The heart was apparently displaced to the left, the impulse being in the fifth space about one inch external to the left nipple; the cardiac sounds were normal. There was no laryngeal paralysis or alteration in the pupils. The face was cyanosed and puffy; a few distended veins could be seen on the right side of the neck and over the sternum. A little blood-stained mucus was expectorated.

Two days after admission the right pleural sac was aspirated from behind, and 132 ounces of blood-stained fluid removed; the cardiac impulse now retreated to the nipple line, and friction was audible on the right side in front from the third to the sixth ribs, where the dulness was more absolute than elsewhere. After aspiration the cough became very troublesome and the viscid blood-stained expectoration increased; the face also was more puffy, and the right arm became swollen. On January 12th pericardial friction appeared, subsiding in about a week; a loud vascular hum could at times be heard in the epigastrium, especially after exertion. The cough was now exceedingly distressing, and the veins of the abdomen were prominent; the abdominal wall, too, on the left side was œdematous, and some enlarged glands were present in the right axilla. The patient continued in this condition with slight variation until March 19th, when he died after an attack of extreme dyspnœa, during which the right side of the chest was twice ineffectually aspirated.

*Post-mortem.*—The right lung was universally adherent and extensively infiltrated with glistening white new growth, a portion only of its outer and posterior aspect being free, and the lung tissue here was collapsed and bronchopneumonic. The mediastinum also was infiltrated with growth, but the glands did not appear to be particularly involved. The heart was not much displaced, but the pericardium was universally adherent, and both auricles were invaded and penetrated by new growth, which also encased the superior vena cava, projecting into its lumen. A piece of growth about the size of a pigeon's egg lay free in the left ventricle. The growth in the lung also exercised pressure on the inferior vena cava at its commencement, and the abdominal cavity contained 2½ pints of blood-stained fluid, but no growth. The kidneys and liver were congested, and the left lung was congested and œdematous. No secondary growths were found.

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### III. DISEASES OF THE CIRCULATORY SYSTEM.

#### 1. PERICARDITIS AND ENDOCARDITIS; ASPIRATION OF PERICARDIAL SAC; HYPERPYREXIA.

O. L.—, cook, æt. 22, unmarried, admitted October 26th, died December 17th, 1895. Father rheumatic; the patient had herself had rheumatic fever and pleurisy three times. The day before admission there was a recurrence of pain in the knees, ankles, and left side of chest.

When examined there was slight effusion into both knee-joints and the right wrist-joint; in addition the ankle, hip, tarso-metatarsal, and interphalangeal joints were tender. The area of cardiac dulness was increased upwards to the third rib, and the impulse was in the fifth space in the nipple line; a mitral systolic murmur was present at the impulse, and over the third and fourth left intercostal spaces a friction rub. The lungs appeared normal, the urine contained a trace of albumen, and the temperature was 101° F.

Three days later pleural friction developed on the left side in front. On November 2nd the cardiac dulness extended as high as the second rib, and the impulse was very diffuse; friction was present over the whole cardiac area, and the temperature still remained at about the same level as on admission, being not much reduced by repeated tepid sponging. As the effusion in the pericardial sac was increasing, and the pulse showed signs of failure, leeches were twice applied over the cardiac area with considerable relief, but the area of dulness continued to extend, and on November 14th was nearly three inches to the right of the sternum, friction being very loud. The next day the pericardium was aspirated through an incision in the fourth right interspace close to the sternum;  $4\frac{1}{2}$  ounces of reddish serum were removed. The circulatory embarrassment was relieved, and the area of dulness slightly diminished during the next few days. The temperature now varied between  $101^{\circ}$  and  $103^{\circ}$  F. and the pulse between 120 and 130 per minute. The patient was extremely restless. On November 29th there was evidence of right-sided pleurisy, resonance being impaired, breath sounds faint, and friction audible towards the right base. Delirium supervened, and on December 16th the patient died with hyperpyrexia, the temperature reaching  $107.4^{\circ}$  F.

*Post-mortem*.—The pericardial sac was completely obliterated, and both lungs were adherent over their whole surfaces, the adhesions being strong and fibrous. The lungs were compressed and short of air, but showed no antecedent disease. The heart was apparently of normal size, and showed no change in its substance; the mitral valve was thickened and slightly incompetent as the result of chronic endocarditis. There were no vegetations. The liver was slightly congested, and the kidneys were pale.

## 2. ADHERENT PERICARDIUM.

G. H—, labourer, æt. 54, admitted May 9th, died May 27th, 1895. He had had enteric fever and syphilis, but never rheumatism. He was a free drinker and subject to winter cough. For five months before admission he had been subject to cough and dyspnoea, and had lately twice fainted; he had also noticed swelling of the abdomen.

When examined there was found evidence of bronchitis, numerous rhonchi and crepitations being heard over the lungs; there were signs also of some fluid in each pleural sac. The cardiac dulness commenced at the fourth left costal cartilage, and the impulse was in the fifth space one inch internal to the nipple; dulness did not extend to the right of the sternum. The heart sounds were very faint, and no murmur was detected; the rate was 80, and the pulse feeble and small. The abdomen contained a considerable amount of fluid. There was no albuminuria, but the urine was dark and scanty, suppression finally ensuing despite wet cupping and the use of digitalis. A condition of stupor with circulatory failure terminated in death.

*Post-mortem*.—The pericardial sac was completely obliterated by very firm adhesions. The heart itself was small and the valves competent; the right ventricle was proportionately enlarged. The inner surface of both lungs were firmly adherent to the heart, and each pleural cavity contained 3 pints of clear fluid. The lower lobes of the lungs were compressed and airless. The



abdomen contained 2 pints of clear non-inflammatory fluid, the liver was in an early nutmeg condition, and the kidneys chronically congested.

### 3. MALIGNANT ENDOCARDITIS; MENINGITIS.

(i) B. M—, kitchen-boy, æt. 14, admitted March 11th, died April 5th, 1895.

Had had rheumatic fever three times, having been in hospital with his last attack in 1893; his heart then presented signs of aortic and mitral incompetence.

Three days before readmission headache commenced, and became gradually more intense.

When examined on admission there was no paralysis and no optic neuritis. The heart was considerably enlarged, and the impulse was in the sixth space in the nipple line. A loud aortic diastolic murmur was audible, and the pulse was collapsing. The lung resonance was normal, but at the left base posteriorly many crepitations were present. Nothing abnormal was detected in the abdomen. Temp.  $101.4^{\circ}$  F.; pulse 74; resp. 18.

The headache persisted, and was chiefly vertical; the temperature became normal on the morning after admission, but quickly rose again to  $102^{\circ}$  F., and from this time onward was very irregular, oscillating considerably and varying between subnormal and  $104^{\circ}$  F. Ten days after admission, in addition to the aortic diastolic a mitral systolic murmur was detected; the headache was now much worse, both pulse and respiration accelerated. (Resp. 44; pulse 106. On March 23rd he vomited two or three times, the head was becoming retracted, and the lower edge of the right optic disc was thought to be blurred. Vomiting continued, optic neuritis finally became very marked in both eyes, and the boy was apathetic and tremulous, but no definite paralysis was detected. The temperature still oscillated, and on one occasion rose to  $106^{\circ}$ , the patient complaining of a feeling of chilliness. Antipyrin and bromide having failed to alleviate the headache, morphine was resorted to. The urine now contained a trace of albumen, and bedsores threatened on the right heel and bony points of the pelvis. Death occurred on April 5th.

*Post-mortem*.—Both pleural sacs were partially obliterated by adhesions, and the pericardium was so firmly adherent that it could not be detached from the heart. The heart was much more dilated than hypertrophied. The aortic valves were extensively diseased and covered with exuberant granulations, which were infiltrated with greenish-yellow pus; one flap was aneurysmal and transversely rent, and granulations extended from the valve on to the wall of the left ventricle. A row of small recent granulations fringed the mitral valve. The lungs were œdematous, and in parts so much congested as to simulate infarction. The spleen was large, firm, and extensively infarcted. Each kidney contained small hæmorrhagic wedge-shaped infarcts, and a yellow infarct about half an inch in diameter was found in the liver; the latter viscus showed an early nutmeg condition. There was extensive basal purulent meningitis extending into the Sylvian fissures and on to the left temporo-sphenoidal lobe. The cerebral arteries and sinuses were healthy; the brain substance was somewhat softened.



(ii) J. E—, coal porter, æt. 51. admitted June 28th, died June 30th, 1895.

A strong and healthy man until five weeks before admission, when he complained of pain in the back and general weakness. He continued his work, and sixteen days before admission, becoming suddenly worse, was carried home; he then had headache, pain in the chest, cough, and latterly, slight hæmoptysis.

When examined he was drowsy, complaining of headache, and the skin was hot and dry. The pulmonary resonance was good, the vesicular murmur faint, and numerous rhonchi audible. Cough was incessant, but there was no expectoration. The only abnormality noticed about the heart was faintness of its sounds. No sign of disease was discovered in the abdomen. Temp. 103·2° F.; pulse 84; resp. 38. No alteration in motion or sensation was detected, and the reflexes were normal.

The next day drowsiness was more marked, with intervals of muttering delirium; subsultus tendinum was constant, and the movements of the left eye impaired, so that by night there was complete external ophthalmoplegia. There was no optic neuritis, but a small glistening area was seen near the right disc and thought to be possibly a tubercle in the choroid. Complete coma ensued with continued pyrexia, and death occurred on June 30th.

*Post-mortem.*—The lungs were congested and œdematous; the upper part of the left lower lobe was consolidated, of a dark red colour and fleshy consistence. The heart was moderately and uniformly enlarged. Exuberant granulations covered the aortic valves; the latter, nevertheless, were competent to the water test. The mitral valve was healthy. Liver and spleen moderately enlarged. Extensive meningitis, both vertical and basal, was present, the sulci being full of yellowish exudate. The brain itself was softened. The pus yielded a pure culture of the pneumococcus.

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## IV. DISEASES OF THE DUCTLESS GLANDS.

### 1. ADDISON'S DISEASE.

J. W—, labourer, æt. 34, admitted September 20th, died September 25th, 1895. The mother and one sister of this patient died of phthisis. He himself had influenza several times since 1893, once in conjunction with pneumonia. For about a week before admission he was troubled by vomiting and diarrhœa, the vomiting being independent of meals. For nearly two years he had complained of great weakness and headaches; his appetite had failed, and what little food he took caused a sensation of pain and fulness at the epigastrium. His friends had remarked a darkening of the colour of his face.

Upon examination, his face, hands, knees, and abdomen were found to be of a dusky brown colour, as if sunburnt; pigmentation was also evident on the buccal mucous membrane, and some discrete dark spots were seen on the right thigh. The pulse was rapid (108 per minute), being only just perceptible at the wrist, and the heart sounds were very feeble; there was a distinct tendency

to syncope after exertion. At the apices of the lungs the percussion note was impaired, and a few crepitations were audible after coughing. The other viscera appeared normal. There was no albuminuria, and no fever. Two days after admission it was found necessary to resort to rectal feeding on account of continued sickness, and at the same time a quarter of a supra-renal gland was administered in a capsule by mouth, but induced vomiting. The pulse was now failing, and the extremities cold. Death occurred at 8 p.m. on September 25th.

*Post-mortem.*—Both supra-renals were extensively diseased; the right was full of calcareous masses, and surrounded by indurated tissue, whilst the left was extensively caseous. The heart was small. Old fibrous nodules were found at the apex of each lung, with much pleural thickening, but no active tuberculosis. The other viscera appeared healthy.

## 2. EXOPHTHALMIC GOITRE; BRONCHO-PNEUMONIA.

R. C—, female, æt. 35, married, admitted February 5th, died February 18th, 1895. Father and mother healthy, but latter of a neurotic tendency. The patient had a family of four, all living and well. Her illness commenced insidiously eighteen months before admission, prominence of the eyes first attracting attention; palpitation and hand-tremor were noticed soon afterwards, and finally swelling of the neck. During this time she was subject to diarrhœa and swelling of the legs. In 1894 it became necessary to tap the abdomen owing to ascites.

When examined, the eyes were found to be very prominent, and the lateral lobes of the thyroid gland enlarged. The area of cardiac dulness was increased, commencing above at the third left rib, but not extending to the right of the sternum; the impulse was in the fifth space in the nipple line. A systolic murmur was audible over the greater part of the cardiac area. Pulse 96, very irregular. The carotids were throbbing, and the capillaries pulsated. Percussion resonance over the lungs was not impaired, but rhonchi and crepitations were audible everywhere, the latter particularly over the lower lobes. The liver extended  $1\frac{1}{4}$  inches below the costal margin, but the spleen could not be felt. The abdomen contained a little free fluid; the legs were not œdematous. The skin of the abdomen and face was pigmented, a fine tremor accompanied muscular exertion, and the urine contained a trace of albumen. Temperature was normal. Extract of thymus was ordered, and to this, two days later, was added bismuth, on account of diarrhœa. The moist sounds in the lungs rapidly increased, and the temperature rose on the 9th to  $101.4^{\circ}$  F., and on the next day to  $103.6^{\circ}$  F. Ammonia and senega mixture was substituted for the thymus. Patchy dulness appeared over the right lung, and the heart showed signs of failure. Diarrhœa and irregular fever persisted until death.

*Post-mortem.*—The thyroid gland was uniformly enlarged, and covered by a network of large veins. A few colloid masses were present in the gland. The lungs were broncho-pneumonic, and the right ventricle of the heart dilated, whilst the left was hypertrophied. There was no valve lesion. The peritoneum contained about four pints of fluid, and there was old inflammatory mischief about the left Fallopian tube.

## V. DISEASES OF THE DIGESTIVE SYSTEM.

## 1. CARCINOMA OF OESOPHAGUS; LEFT OPHTHALMOPLÉGIA.

J. H—, auctioneer's assistant, æt. 51, admitted February 14th, died March 10th, 1895. The patient, a married man with a large family, gave no history of intemperance or of syphilis. He complained of progressive difficulty in swallowing of three months' duration, of swellings in his neck, and hoarseness. Five weeks before admission he experienced pain in the frontal region, followed by double vision, and in three days his left upper eyelid became paralysed.

On examination when admitted, the extrinsic muscles of the left eye, with the exception of the external rectus, were completely paralysed. The left pupil was larger than its fellow, and immobile. Accommodation was active, and the visual fields of normal size. There was no optic neuritis. (Ten days before admission the condition of the eye was the same, with the exception that the external oblique was then active.) There was no power of abduction of the left vocal cord, and a small œsophageal bougie was arrested  $8\frac{1}{2}$  inches from the incisor teeth. The cervical and axillary glands, especially those on the left side, were enlarged and very hard. No other indication of disease was found.

The patient was treated with potassium iodide and mercury. Slight weakness of the right arm was detected on March 1st, but did not increase. Two days later inspiratory stridor was noticed, and a second laryngoscopic examination showed that there was now incomplete right abductor paralysis in addition to that on the left. The patient was daily becoming weaker, and on account of difficulty in swallowing was fed by the nasal tube. Tracheotomy became necessary on March 9th, and death occurred the next day.

*Post-mortem.*—The body was but little wasted. On the anterior wall of the œsophagus, three inches below the cricoid cartilage, was a small oval ulcer with infiltrated edges; a little above this lay a nodule of new growth which projected slightly into the lumen of the tube. The cervical and axillary glands, as also the connective tissue between the trachea and œsophagus, and trachea and manubrium, were infiltrated with soft white growth. At the point where the left third nerve entered the wall of the cavernous sinus, there was a greyish red tumour situate on the dorsal surface of the nerve trunk. The weakness of the arm was probably due to pressure of the mass of axillary growth on nerve trunks. Microscopically the growth proved to be primary œsophageal carcinoma, with secondary deposits. Only a partial examination of body was allowed. The liver and spleen were moderately enlarged, the thymus was atrophic, and the lymphatic glands throughout the body of normal size.

## 2. GASTRIC ULCER; PERFORATION THROUGH DISTURBANCE OF ADHESIONS.

M. T—, female, æt. 32, admitted December 8th, died December 9th, 1895.

The patient, who five years previously was treated in the hospital for gastric ulcer, remained well, with the exception of slight discomfort after food, until the day before re-admission, when she was suddenly seized with acute abdominal pain. When



seen she was evidently suffering from acute general peritonitis with extreme collapse. The pulse was 160, the face drawn, eyes sunken, abdomen perfectly rigid, painful and tender, and the urine retained. There was evidence of free fluid in the peritoneum. The liver dulness was not obliterated. Her condition being held too bad for operation, morphine was injected. Death occurred next day.

*Post-mortem.*—The peritoneal cavity contained free gas, and was the seat of general inflammation of moderate intensity. The contents of the stomach had escaped through a clean-cut circular aperture on the anterior aspect of the lesser curvature. The aperture, which was  $\frac{1}{4}$  inch in diameter, lay just under cover of the costal margin, to which it was probably adherent during life. A mass of cicatricial tissue surrounded the ulcer and gave the stomach an hour-glass shape. There was no other sign of disease.

### 3. GASTRIC ULCERS; HÆMATEMESIS; DISTURBANCE OF ADHESIONS; LOCAL PERITONITIS; HYPERPYREXIA.

C. O—, general servant, æt. 23, admitted February 25th, died March 4th, 1895.

A history of scarlet fever and measles in childhood, and an attack of chorea when 11 years of age. For two years she had been anæmic and breathless, and three weeks before admission was suddenly seized with gastric pain and vomiting after food; the pain and vomiting were after three days controlled by medicine. Two days before admission she suddenly and without warning vomited a pint of dark blood.

When admitted, beyond slight abdominal distension, physical examination revealed nothing abnormal. She was fed by rectum and experienced no discomfort until March 2nd, six days after admission, when she vomited a little clear fluid admixed with blood. Her temperature, which on only two occasions previously had reached 100° F., and had been quite normal for five days, began to rise; the day after the hæmatemesis it was 102·6° F., the next morning 105·8° F., the patient being in a condition of stupor, and just before death 107° F. was registered.

*Post-mortem.*—A small quantity of greenish mucoid fluid, similar to stomach contents, lay around the spleen, a few ounces of similar fluid occupied the lesser sac of the peritoneum, and in both positions there was slight injection of the serous membrane. The detachment of a clean-cut, fairly recent ulcer of the cardiac end of the stomach from its adhesions to the spleen had caused the leakage of stomach contents in this situation. From a similar clean-cut floorless ulcer on the posterior wall of the stomach, leakage had occurred into the lesser sac. The latter ulcer had been probably adherent to peritoneum behind the stomach. A third ulcer lay in the posterior wall of the stomach, to the right and slightly above the preceding; this also was quite recent, and its floor was formed by one of the muscular coats. The ulcers were all about  $\frac{1}{2}$  inch in diameter. There was no evidence of general peritonitis and no disease elsewhere in the body.



#### 4. GASTRIC ULCER; DISTURBANCE OF ADHESIONS; GENERAL PERITONITIS; OBLITERATION OF PERICARDIAL AND OF ONE PLEURAL SAC.

B. T—, female, æt. 13, admitted July 12th, died July 13th, 1895.

The patient, who had occasionally suffered from pain after food, and sometimes vomiting but never hæmatemesis, was four days before admission seized with acute abdominal pain and persistent vomiting.

When admitted her abdomen was found to be acutely tender, distended, and motionless on respiration. Collapse was considerable, the pulse 120 and temperature  $97.2^{\circ}$  F. Exploration of the abdomen revealed the presence of acute general peritonitis, but the origin of this was not ascertained. Death occurred twelve hours after operation.

*Post-mortem*.—The peritonitis was found to be general, with a considerable amount of fibrinous deposit and effusion. The inflammation was due to the partial separation of adhesions which bound a small and not recent ulcer of the anterior wall of the stomach to the under surface of the left lobe of the liver. The diameter of the ulcer was about  $\frac{1}{2}$  inch. The pericardial sac was entirely obliterated, but the heart was not obviously affected, and its valves were quite normal. The right pleural sac was also obliterated by dense adhesions. The other viscera were healthy.

#### 5. GASTRIC ULCER; EROSION OF SPLENIC ARTERY AND FATAL HÆMORRHAGE.

E. K—, female, æt. 19, admitted February 28th, died March 2nd, 1895. The patient had for one year been very anæmic. Five days before admission profuse hæmatemesis and abdominal pain occurred.

When admitted she was blanched. The area of cardiac dulness was slightly increased, and hæmic murmurs were present at the apex and over the pulmonary area. The pulse was 120, and temp.  $101.4^{\circ}$  F. There was considerable epigastric tenderness. Rectal feeding was ordered, morphine injected, and nothing given by mouth but a little ice. Profuse hæmatemesis recurred on March 1st, and saline solution was injected into the rectum; the patient became very restless, complaining of thirst, and the temperature rose to  $102.2^{\circ}$  F. Hæmatemesis again recurred the same evening, and notwithstanding the infusion of saline fluid into the veins and bandaging the limbs, death resulted soon after midnight. The temperature just before death was  $102.8^{\circ}$  F., and the pulse 140.

*Post-mortem*.—The posterior wall of the stomach was fixed by old adhesions to the front of the pancreas. The stomach was full of blood-clot, bleeding having occurred from a ruptured aneurysmal dilatation of the splenic artery. The aneurysm lay in the floor of an ulcer of the posterior surface of the stomach, rather nearer the cardiac than the pyloric end. The ulcer was about 1 inch in diameter, and evidently not very old. The splenic artery was not thrombosed. There were one or two old infarcts in the spleen. The heart was rather large, but there was no valvular lesion. The other viscera were healthy.

## 6. GASTRIC ULCER; EROSION AND PLUGGING OF SPLENIC ARTERY; RUPTURE OF ADHESIONS; PERITONITIS.

W. J—, blacksmith, æt. 53, admitted February 10th, died June 8th, 1895. Father and mother healthy; one sister died of phthisis. Formerly a free drinker, and had contracted syphilis. His first attack of hæmatemesis occurred in 1892, followed by complete blindness of the left eye, with atrophy of the optic disc. After this there was no recurrence of hæmorrhage until five days before admission, when a small quantity of blood was vomited, and the motions were noticed to be black and tarry. Four days later hæmatemesis recurred to the extent of a pint and a half. For some weeks previous to the second hæmatemesis there had been a pain across the pit of the stomach.

When admitted the patient was anæmic, the heart sounds feeble, and pulse 100, but no other signs of disease were found. He was kept on milk diet until February 13th, and was then allowed bread and butter; the next day hæmatemesis recurred to the extent of half a pint, and was accompanied by melæna. After a week's rectal feeding ordinary diet was gradually resumed without any discomfort, and he was discharged on February 26th.

Soon after discharge he began to suffer abdominal pain, particularly after food, and on June 1st hæmatemesis recurred. He was readmitted the same day, and now some tenderness was discovered in the epigastrium. Peptonised milk was retained, and appeared to relieve the pain. On June 8th the patient suddenly collapsed with extreme abdominal pain and rigidity. The liver dulness in the parasternal line disappeared. The general condition did not admit of operation, and death took place within 12 hours.

*Post-mortem.*—The peritoneal cavity contained free gas and stomach contents. There was general peritonitis, due to the rupture of adhesions binding an old gastric ulcer to the pancreas. The ulcer was roughly circular, 2 inches in diameter, and involved the lesser curvature close to the cardiac orifice. On the floor of the ulcer, which was formed by eroded pancreas, lay the splenic artery, eroded and plugged with clot. The spleen was not enlarged. The left ventricle of the heart was somewhat dilated; there was no valve lesion. Other viscera healthy.

## 7. GASTRIC ULCER; SUDDEN DEATH SEVEN DAYS AFTER ADMISSION.

M. C—, laundrymaid, unmarried, æt. 18, admitted October 31st, died November 7th, 1895. Both mother and father were said to have died with heart disease. The patient had enjoyed good health until six months before admission, when she began to experience pain after food, and for two months vomiting had been frequent and severe. She applied for admission on October 3rd on account of exacerbation of the pain the previous night. There had been no hæmatemesis.

When examined on admission the upper part of the abdomen was found exceedingly rigid and tender. The heart's area of dulness was slightly enlarged, and a distinct to-and-fro friction rub was heard at the base of the sternum; hæmic murmurs were also present; temp. 100·2° F.; pulse 132. There were

no other signs of disease. Under the use of opium and rectal feeding the abdominal pain and rigidity disappeared, the pericardial friction cleared up, and in six days the temperature was nearly normal. Death occurred suddenly and unexpectedly on the morning of November 7th.

*Post-mortem*.—A small recent conical ulcer of less than half an inch diameter was found on the anterior surface of the stomach. The base of the ulcer was adherent to the left lobe of the liver, and there was very slight evidence of surrounding inflammation. The heart was healthy, and, notwithstanding the friction heard during life, no evidence of pericarditis existed. Both pleural sacs were obliterated by old and dense adhesions, and at the apex of the right lung were some old fibrous nodules. The other viscera, including the brain, appeared healthy, and nothing was found in the body to account for the sudden death.

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## VI. DISEASES OF THE PANCREAS AND LIVER.

### I. CARCINOMA OF PANCREAS; SECONDARY DEPOSITS IN LIVER.

R. G—, æt. 60, admitted April 2nd, died May 24th, 1895.

There was nothing of importance in the family history. The patient had enjoyed good health until a month before admission. There was no history of syphilis, but he had indulged freely in both beer and spirits. About the end of February he began to complain of pain after his food, and discovered that the upper part of his abdomen was tender. A few weeks before admission his navel became red and inflamed, and finally, after poulticing, suppurated. The bowels were very constipated.

On admission the abdomen was rigid and its upper part tender. The navel was indurated, and discharging a little pus. There was no free fluid in the abdomen, and neither liver nor spleen appeared enlarged. The thoracic viscera appeared healthy; there was no albuminuria; the temperature was normal. Microscopical examination of the purulent discharge from the umbilicus threw no light on the case. The patient's rest was much disturbed by the abdominal pain. Jaundice was first noticed on April 18th, and the area of liver dulness slowly increased, so that on April 26th it measured seven inches in vertical extent, commencing at the upper border of the fourth rib and terminating one inch below the costal margin. The sinus at the umbilicus was closing. On April 27th, under an anæsthetic, the sinus was explored and scraped, and proved to have no deep connection; at the same time indefinite thickening over the left lobe of the liver was made out. Jaundice became gradually more intense, and the surface of the liver was locally tender. Abdominal distension, ascites, and diarrhoea supervened. Death occurred on May 24th. The temperature was normal throughout.

*Post-mortem*.—The peritoneum contained a few pints of turbid serum. The liver was of great size, weighing 143 ounces, but retaining its normal shape; it



was infiltrated throughout with new growth. The gall-bladder was only moderately distended, and the bile-ducts not dilated. The pancreas was converted into tough, semi-translucent tissue, and the glands in the portal fissure of the liver enlarged. There were signs of local peritonitis, both old and recent, in the right upper quadrant of the abdomen. The diaphragm was displaced upwards, the lower lobe of the right lung collapsed, and the right pleural sac contained about half a pint of bile-stained serum. The sinus at the umbilicus was quite superficial, and independent of the new growth. Microscopically both pancreas and liver were found to be infiltrated by spheroidal-celled carcinoma.

## 2. MALIGNANT GROWTH OF PANCREAS; LARGE LIVER; DISTENDED GALL-BLADDER, AND JAUNDICE; EXPLORATION; DEATH.

R. S—, female, married, æt. 44, admitted July 1st, died August 3rd, 1895.

Her mother was said to have died of cancer; the patient herself was a temperate woman with a grown-up family. Since the menopause, a year prior to admission, she had lost flesh and felt weak, but her first definite symptom was jaundice, with discoloration of urine and pale motions; this was of six weeks' standing.

On examination there was no evidence of cardiac or pulmonary disease with the exception of slight emphysema. A large tender liver extended  $4\frac{1}{2}$  inches below the ribs, and a distended gall-bladder could be felt projecting below it. There were a few hard glands in each groin; the skin was deeply jaundiced but not itching, the urine contained bile pigment, and the temperature was normal. Abdominal exploration, on July 26th, revealed the presence of new growth in the head of the pancreas; the gall-bladder was incised, and large quantities of bile escaped later through the fistulous opening. The temperature, which since admission had been slightly febrile, fell to normal after the operation, but albuminuria ensued, the gums began to bleed, blood and mucus appeared in the stools, and the vomit appeared to contain blood. She died on August 3rd.

*Post-mortem.*—A small fistula led from the gall-bladder on to the surface of the abdomen. The gall-bladder, cystic and common ducts, were all much distended, and contained a dark green mucoid fluid. A mass of pearly white growth in the head of the pancreas obstructed the common duct in this situation. The liver was now small, bile-stained, and fatty; the radicles of the hepatic ducts were much distended. The kidneys were large and bile-stained, but did not appear diseased. Other viscera normal. No secondary growths.

## 3. MALIGNANT DISEASE OF PANCREAS; SECONDARY DEPOSITS; JAUNDICE.

C. W—, plasterer, æt. 67, admitted July 5th, died August 3rd, 1895. Always a healthy man up to present illness. A moderate drinker. Two months before admission he first noticed epigastric pain and tenderness, accompanied by nausea, flatulence, and irregularity of bowels; at the same time he emaciated.

On admission, the upper part of the abdomen was found to be distended by what was apparently an enlarged liver with nodular surface. The liver dulness



commenced above at the lower border of the fifth rib, and the edge could be felt at the level of the umbilicus. The gall-bladder was not distended, the spleen could not be felt, there was no jaundice and no ascites. The thoracic viscera appeared normal; there was no albumen in the urine, and no fever.

Pain and nausea continued, and about three weeks after admission an icteric tinge appeared, which gradually increased in intensity. The patient became gradually weaker, and was much distressed by almost constant retching and vomiting of bile-stained fluid. The abdomen became more distended, signs of free fluid appeared, and an irregular nodular mass was felt in the epigastrium. Death occurred on August 3rd. The temperature was normal or subnormal throughout.

*Post-mortem*.—A mass of fibrous new growth, about the size of a Tangerine orange, was found in the head of the pancreas, and apparently exercised pressure on the common bile-duct. The liver was much enlarged, and infiltrated throughout with new growth; the gall-bladder was atrophied, and contained 6 or 7 faceted gall-stones. The retro-peritoneal glands and great omentum were also infiltrated with growth, and the latter had contracted adhesions to neighbouring parts. The peritoneal cavity contained  $2\frac{1}{2}$  pints of straw-coloured serum. Minute secondary growths were found in each visceral pleura, with a moderate amount of fluid in each sac. The lungs were œdematous and congested, and the kidneys showed a moderate amount of mixed nephritis.

#### 4. MALIGNANT DISEASE OF PANCREAS; DISTENDED GALL-BLADDER, AND JAUNDICE.

T. B—, æt. 63, builder, admitted August 4th, died September 5th, 1895. The patient, a temperate man, was subject to rheumatism, having inherited the tendency from his father. Thirty years ago, or more, he had removed from his lower jaw a growth, the nature of which was not ascertained. For six months prior to admission he complained of continuous epigastric pain with occasional exacerbations. During this time he lost flesh and strength, and his appetite failed. His abdomen began to enlarge 3 months later, and about this time swelling of the feet first appeared.

When admitted he was very emaciated, and decidedly jaundiced. The distended abdomen contained some free fluid, and the liver extended 3 inches below the costal margin; its surface was hard, but not painful or tender. There was no evidence of disease in the thoracic viscera. The urine, which was high coloured, contained a trace of albumen, but no bile. Temperature normal. Whilst under observation, it was found that the ingestion of food considerably aggravated the abdominal pain. Extreme abdominal distension, unrelieved by enemata or aperients, ensued, and the patient died September 5th.

*Post-mortem*.—The distension was due partly to bile-stained ascites and partly to distension of intestines. A small firm growth in the head of the pancreas compressed the common bile-duct, and, as a result, the gall-bladder was distended, and the liver riddled with enlarged bile passages. The size of the latter viscus was slightly above normal, its weight only  $33\frac{1}{4}$  ounces, and it floated in water. The lungs were highly œdematous. Other viscera healthy; no secondary deposits.

## 5. ABSCESS OF LIVER; DRAINAGE THROUGH PLEURAL SAC; DEATH.

F. C—, platelayer, æt. 55, admitted November 9th, died December 16th.

Family history unimportant. The patient had for some years resided in Bombay, and whilst there, in 1887, suffered from painful enlargement of liver, and in 1890 had an attack of dysentery; he also gave a history of malarial fever and of free drinking. The present illness commenced in July whilst still in Bombay, and was characterised by fever and pain in the region of the liver, which viscus was then unsuccessfully explored for abscess.

When admitted he had been 4 months ill, was much emaciated, and complained of vomiting. His skin was uniformly pigmented, and there was also a patchy pigmentation of the mucous membrane of the cheeks. The abdomen was uniformly tender, but not rigid; the edge of the liver could not be felt, but the spleen extended about  $\frac{1}{2}$  an inch below the costal margin. Lungs and heart appeared healthy. The urine contained a trace of albumen, and the temperature was 102·2° F. On November 11th friction was audible in the right axilla. The blood was examined for malarial organisms and the sputum for tubercle bacilli, both with negative result. The temperature continued to range from 102° to 103° F. Eight days after admission the liver dulness was found to extend as high as the 5th rib in the nipple line and the 7th rib in mid-axilla; the chest wall on this side was slightly œdematous. The liver was therefore explored with an exploring needle, and pus found at the second attempt in the axillary line. The pus contained no amœbæ and no micro-organisms. On November 18th the abscess was drained through the right pleura and diaphragm, the pleural sac being shut off by sutures after resection of part of the 8th rib. The abscess cavity was irrigated with sterilised water and a glass drainage-tube inserted. The abscess discharged freely, but the patient's condition did not improve; diarrhœa set in, and eleven days after operation a rigor occurred during which the temperature reached 104·4° F. The base of the right lung in front and in the axilla being absolutely dull on percussion, with diminished sounds, the pleural sac was unsuccessfully aspirated. Death occurred on November 16th.

*Post-mortem*.—Although the right pleural cavity was completely obliterated by fairly old adhesions around the track of the drainage-tube, the adhesions were œdematous, and spreading away from them was a recent pleurisy with fibrinous exudate. There were three intercommunicating abscesses in the upper part of the right lobe of the liver, two being about the size of a Tangerine orange and one smaller. Two of the abscess cavities were obviously of greater age than the third, and the pus in all was thick and viscid. The rest of the liver was fatty, and the spleen large and soft. The whole of the mesentery and omentum was sprinkled with black pigment. The intestine was not ulcerated. Beyond compression of the right lower lobe there was no lung lesion.

## VII. DISEASES OF THE NERVOUS SYSTEM.

## 1. THROMBOSIS OF THE LEFT VERTEBRAL ARTERY; LOCALISED SOFTENING OF MEDULLA.

E. R —, æt. 40, married, admitted September 4th, died September 16th, 1895.

The patient, who came from a healthy family, was said to have had no previous illness. She was childless. There was no suspicion of syphilis but a history of free indulgence in alcohol.

Twelve days before admission she was seized with severe headache, accompanied by vomiting and giddiness; these symptoms apparently subsided temporarily, but returned four days later with loss of power of swallowing, a very unsteady gait, and dribbling of saliva from the mouth. The patient stated also that for several days after this re-accession of symptoms she saw double.

When examined on admission there was decided weakness of the orbicularis oris on the left side; the left side of the tongue also lay higher in the mouth than the right, but the deviation on protrusion was very variable. The fauces were much congested, and clogged with tenacious mucus. The soft palate was not paralysed. It was with great difficulty that the smallest quantities of fluid were swallowed, and nasal feeding had to be resorted to on this account. The left vocal cord lay motionless in the cadaveric position. The eye movements appeared rather unsteady, but there was no definite nystagmus; the left pupil was smaller than the right, and its reactions sluggish; the fundus was normal. No weakness of arms or legs was detected, but the movements of the left limbs were inco-ordinate. There was no tactile anæsthesia, but on the right side of the body, heat, cold, and pain were recognised as tactile sensations, heat being described in addition as a pricking sensation. It was remarkable that thermal and painful sensations were not appreciated over the area of the right side of the face, supplied by the second division of the fifth nerve. Hearing, taste and smell were normal. The sphincters were fully controlled, the knee-jerks obtained with difficulty, and the plantar reflexes normal. The urine contained a trace of albumen. Temp. 100°, and pulse rapid. No evidence of disease in lungs, heart, or abdomen.

For the next two days the condition practically remained unaltered, and then it was noticed that muscular power in the extremities was impaired, particularly on the right side. On September 9th, five days after admission, there was evidence of thrombosis of vessels in the left arm. The limb became swollen and œdematous, the veins were felt as hard cords, and the pulse was indistinct. The next day the left leg became tender, but no plugged vessel could be differentiated. The temperature since admission had varied between 101° and 102° F., and the pulse averaged about 124. Sensation was again carefully tested on September 12th, and found to have slightly improved on the right arm and leg, and the cutaneous area of the second division of the fifth on the right was not now analgesic. Food was being taken very badly through the nasal tube, and the patient since September 5th had been taking Perchloride of Mercury and Iodide of Potassium in full doses. The left leg and calf now became more acutely tender



and slightly swollen, but the pulse in the limb was fair. Owing to the accumulation of mucus in the throat and the laryngeal paralysis, it was extremely difficult to understand the patient's words. The urine still contained a trace of albumen, and the swelling of the left leg and thigh continued to increase. On September 14th the left side of the body appeared hyperæsthetic, whilst on the right sensation remained as before. It was also thought that the left palpebral fissure was smaller than the right. The urine now contained an increased quantity of albumen, and also some blood-cells and granular leucocytes. There was a mucous rattle in the throat, and respiration was rapid and shallow. Death occurred on September 16th.

*Post-mortem*.—The left vertebral artery in its upper two thirds was firmly thrombosed, and the left half of the medulla showed two small foci of softening. The softened areas lay in the floor of the fourth ventricle on its lateral aspect, one, about the size of a large shot, being at the junction of the pons and medulla, and another, rather larger, about one third of an inch lower down; the surrounding nerve tissue was also softened, and showed hæmorrhagic puncta. With the exception of a very small area of softening at the extreme lateral margin of the left lobe of the cerebellum, the rest of the brain was healthy. The left axillary artery was plugged by firmly adherent clot. The axillary vein, brachial venæ comites, lower two inches of the inferior vena cava, and veins of the left leg extending from the latter, contained also thrombi, which were in parts organising. The lungs were congested and œdematous, and the kidneys appeared simply enlarged. The bladder contained a considerable quantity of dirty-looking urine resembling coffee-grounds. Nothing further abnormal. Microscopical examination of the thrombosed arteries and veins showed organising clot in apparently healthy vessels. In none of the numerous sections examined was any evidence of endarteritis discovered.

## 2. MALIGNANT GROWTH OF SPINAL CORD AND MEDULLA.

C. S.—, æt. 8, admitted April 18th, died October 20th, 1895.

Family history unimportant; previous health uniformly good; forceps used at birth. The boy was away from home from January to April, 1895, and on his return his mother observed weakness of his right arm and leg. He complained of no pain, and 4 days later was brought to the hospital.

The power of flexion and extension of the forearm, wrist, and fingers on the right side was very defective, the grasp was quite powerless, and the forearm nearly half an inch less in circumference and colder to the touch than its fellow. The right leg was also weakened, and the circumference of the right calf half an inch less than the left. The right eyelid drooped, and the right pupil was smaller than the left, but both pupils reacted readily to light and in accommodation. Sensation was unaffected. The gait was very unsteady, with a tendency to stagger. Both plantar reflex and knee-jerk were more brisk on the right than the left. Control of the sphincters was perfect. No sign of disease was found in the thoracic or abdominal viscera.

About May 10th it was noticed that the head fell forwards and voluntary extension was impossible; the right arm was almost helpless, and the left weak. The boy was fretful, and complained of pain just below the occiput posteriorly;



rotatory movements of the head were not resisted, but flexion and extension were not quite free. The cervical spine was not thickened or deformed. By June 8th the boy was quite unable to stand, and the pain in the upper part of the neck was very severe, causing him to cry out. The head was strongly inclined towards the left shoulder; the left arm was becoming weaker, the flexor muscles in particular being affected; the legs were both very rigid, and the reflexes increased. There was still no anaesthesia, and some loss of control over the sphincters had proved to be only temporary. There was no optic neuritis. Early in July the head was fixed by sandbags and extension applied to the legs and head; these measures to a certain degree corrected the deviation of the neck and commencing contracture of the legs. A careful examination on August 1st revealed the presence of irregularly distributed anaesthesia of the left leg and ulnar aspects of the forearms, but not of the hands or fingers. In both hands the thenar and hypothenar eminences gradually wasted, as also did the inter-ossei, and the forearms continued to get smaller, and the pectoral muscles were very hard to make out. At times it was noticed that the hands and forearms became very cold; this was transitory and variable. There was now no control over the bladder. Sensation over the arms and chest appeared defective, but the patient's statements were very contradictory. A small abscess over the occiput was incised on September 2nd, it was probably caused by friction; the legs were slowly and uniformly wasting, probably from disuse; and respiration was entirely diaphragmatic. The hands were now swollen and puffy, and, on one occasion only, unilateral sweating of the right side of the face was noticed. The diaphragm finally failed, and the boy died cyanosed. Throughout with very rare exceptions the temperature was normal and the urine never contained albumen.

*Post-mortem.*—An irregular mass of soft growth replaced the cord from the first to the fifth cervical vertebrae, entirely destroying also the dura mater and pia arachnoid. The growth in addition invaded the medulla, being here enclosed in a peripheral layer of apparently normal nerve tissue. Into the growth in the lower part of the medulla haemorrhage had occurred. The rest of the spinal cord was unduly dense and firm, but showed no naked-eye changes. There was nothing abnormal in the other viscera. The growth upon microscopical examination was supposed to be an infiltrating glioma.

### 3. MALIGNANT INTRA-CRANIAL GROWTH ARISING IN THE PETROUS BONE.

G. L.—, platelayer, æt. 41, admitted May 17th, died July 12th, 1895.

Family healthy, no history of hereditary disease. The only illness from which the patient had suffered was smallpox. He was a moderate drinker, and had never had syphilis. It was subsequently ascertained that for 14 or 15 years he had been liable to an intermittent discharge from the left ear.

He attributed his present illness to a blow upon the left cheek received eight weeks before admission. Four days later he experienced pain in the left side of his face, which pain he referred to his teeth. Three weeks after the blow, left facial paralysis was discovered, and about three weeks later still there was some difficulty in swallowing, and, according to his account, increasing deafness on the

right side; he found also that his arms and legs were becoming weak, and that he was losing flesh.

When admitted he was emaciated, and power in both arms and legs was deficient. The grip of the left hand in particular seemed much weaker than that of the right. The left side of the face, the left vocal cord, and the corresponding halves of the tongue and soft palate were also paralysed. The left ear was quite deaf to air conduction, and partly so to bone conduction; there was a slight purulent discharge on this side. Both pupils reacted readily to light, but the left was smaller than the right. The whole of the left side of the face was anæsthetic, and pain shooting from the throat to the left ear was much complained of. Taste and smell were not impaired, deglutition was difficult. There was no optic neuritis. The abdominal and thoracic viscera appeared normal, and so also were the reflexes of the trunk and lower limbs.

The pain in the left side of the face was referred chiefly to the lower jaw, and necessitated the use of morphine. The teeth were sound. About a fortnight after admission, on account of increasing difficulty in swallowing, rectal feeding was necessary; the right side of the palate was becoming weak, and the pain in the face, which was now referred to the upper jaw, and a spot below the left eye, almost distracted the patient, and necessitated the frequent use of morphine injections. On June 21st a copious discharge of blood and pus occurred from the left ear, and the glands below the ear were enlarged and hard; so far as could be ascertained there was no anæsthesia in the territory of the left fifth nerve, and the eye was intact; pain, however, was as severe as before. On July 8th free arterial hæmorrhage occurred from the left ear, and was only arrested by plugging; there were two slight recurrences. The power of deglutition, which had slightly improved, became again very much impaired, and death occurred from exhaustion on July 11th.

*Post-mortem.*—The left petrous bone and adjacent portion of the occipital bone were excavated and almost destroyed by new growth. The cranial nerves involved were the 3rd division of the 5th, the 7th, and 8th (which two had almost entirely disappeared), 9th, 10th, 11th, and 12th. The 2nd division of the 5th, and the Gasserian ganglion, just escaped. The growth probably originated in the middle ear. Firm white opaque growth infiltrated the dura mater of part of the middle fossa on the left side. The left temporo-sphenoidal lobe of the brain in the neighbourhood of the growth was superficially softened but not invaded, and the left lateral sinus was occluded near its termination in the jugular vein. The left sterno-mastoid muscle and upper part of the left trapezius were much wasted, as also were the left halves of the tongue and palate, the pharyngeal muscles, and the left posterior crico-arytenoid muscle. The lungs were bronchopneumonic. There were no secondary deposits. The growth was not microscopically examined.

# SURGICAL REPORT.

1895.

By CUTHBERT S. WALLACE, M.B., B.S.LOND., F.R.C.S.ENG.

## *General Surgical Statement.*

Number of surgical beds . . . . . 241

„ of surgical patients in hospital, January 1st, 1895 { Males 130  
Females 78

„ „ „ „ December 31st, 1895 { Males 128  
Females 84

„ „ „ treated to a termination in 1895 . . . 3365

	Total.	Males.	Females.
Discharged cured . . . . .	2358	1449	909
„ relieved . . . . .	590	409	181
„ unrelieved . . . . .	222	142	80
Died . . . . .	195	103	92
Totals . . . . .	3365	2103	1262

Average number of days in hospital—23·72.

Death rate=5·79 per cent.

(Ophthalmic cases are not included in the above statement.)

*Note.*—Hernia table this year only contains details of those cases that were strangulated.

TABLE I.—Abstract, showing Diseases, &amp;c., in Classes,

DISEASE.	Sex.		Age.									Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys 1-4	Dys 5-13	Wks 2-4	Mts 1-2	Mts 2-6	Mts 6-12	Chronic	Not stated.	
GENERAL DISEASES.																			
Erysipelas . . .	48	13	15	4	13	19	17	10	5	8	55	13	6	...	...	...	...	17	
Pyæmia . . .	1	1	...	...	...	...	1	1	...	...	1	...	1	...	...	...	...	...	
Septicæmia . . .	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	
Tetanus . . .	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	
Anthrax . . .	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	
Syphilis, congenital	1	2	2	...	...	1	...	...	...	...	...	...	...	1	...	1	1	...	
" primary . . .	2	2	...	...	1	2	1	...	...	...	1	...	...	1	2	...	...	...	
" secondary . .	...	22	...	...	10	11	...	1	...	...	...	2	...	7	5	...	3	4	
" tertiary . . .	8	6	...	...	...	6	4	2	2	...	...	1	...	1	2	1	3	...	
LOCAL DISEASES.																			
Carcinoma—																			
Spheroidal—																			
Breast . . .	...	14	...	...	...	1	3	20	15	5	...	...	1	3	14	10	16	...	
" recurrent . .	...	7	...	...	...	2	2	2	...	1	...	...	...	...	2	2	3	...	
" " in glands	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	
Kidney . . .	1	1	...	...	...	1	...	...	1	...	...	...	...	...	...	...	2	...	
Submaxillary . .	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	
Columnar—																			
Pylorus . . .	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	
Transverse colon .	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	
Cæcum . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	
Descending colon .	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	
Sigmoid flexure . .	...	2	...	...	...	...	...	...	2	...	...	1	...	...	...	...	1	...	
Rectum . . .	16	8	...	...	1	4	1	5	1	12	...	...	6	3	9	4	2	...	
Squamous—																			
Scalp . . .	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	
Ear . . .	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	
Temporal region .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	
Nose . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	
Cheek . . .	2	...	...	...	...	...	...	1	1	...	...	...	...	2	...	...	...	...	
Lip . . .	4	1	...	...	...	...	...	1	1	3	...	...	...	...	2	1	1	1	
" recurrent . .	2	1	...	...	...	...	...	...	2	1	...	...	...	...	...	...	3	...	
Chin . . .	1	1	...	...	...	...	...	1	1	...	...	...	1	...	...	...	1	...	
Tongue . . .	19	2	...	...	...	...	...	6	10	5	...	...	2	4	10	5	...	...	
" recurrent . .	2	...	...	...	...	...	...	...	2	...	...	...	...	...	1	...	1	...	
Floor of mouth . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	
" " recurrent	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	
Tonsil . . .	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	
Fauces . . .	3	...	...	...	...	...	...	...	2	1	...	...	...	1	2	...	...	...	
" recurrent . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	
Palate . . .	3	...	...	...	...	...	...	1	...	2	...	...	...	...	1	2	...	...	



according to *Authorised Nomenclature*.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts 1-2	Mts 2-4	Mts 4-6	Mts 6-9	Mts 9-12	Mts +12		C.	R.	U.	D.	
13	57	12	6	3	...	...	...	...	82	4	...	5		Cellular-cutaneous 2, cellulitis 1, albuminuria 1.
2	...	...	...	...	...	...	...	...	...	...	...	2		See Special Table III.
1	...	...	...	...	...	...	...	...	...	...	...	1		See Special Table III.
1	...	...	...	...	...	...	...	...	...	...	...	1		Cephalic variety. See Special Table III.
...	...	...	1	...	...	...	...	...	1	...	...	...		
...	2	1	...	...	...	...	...	...	...	...	1	2		
1	2	1	...	...	...	...	...	...	1	2	1	...		
...	3	6	8	4	1	...	...	...	13	9	...	...		
1	4	5	3	...	...	...	...	1	5	8	1	...		Ulcers 4; perforation of palate 1; remainder gummata, including multiple gummata of cranium with involvement of nerves.
...	...	...	...	...	...	...	...	...	...	...	...	...		
4	6	18	15	1	...	...	...	...	34	...	8	2		Erysipelas 5, of which 2 were fatal. See Special Table II.
...	1	4	2	...	...	...	...	...	5	1	1	...		
...	...	...	1	...	...	...	...	...	1	...	...	...		Excision. Previous operation 16 months.
...	...	1	1	...	...	...	...	...	1	...	...	1		
...	1	...	...	...	...	...	...	...	...	...	1	...		Operation not advised.
...	...	...	1	...	...	...	...	...	...	...	...	1		
...	...	...	1	...	...	...	...	...	...	...	...	1		Small intestine involved.
...	1	...	...	...	...	...	...	...	...	...	...	1		Typhotomy. Fatal from general septic peritonitis.
...	...	...	1	...	...	...	...	...	...	1	...	...		Right lumbar colotomy.
1	...	1	...	...	...	...	...	...	...	1	1	...		Scirrhus growth, fatal case. Exploratory colotomy only 1.
3	4	9	7	1	...	...	...	...	5	7	7	5		Readmissions 2. Carcinoma of pylorus 1.
...	...	1	...	...	...	...	...	...	1	...	...	...		Commenced as a sebaceous cyst. Excision.
...	1	...	...	...	...	...	...	...	1	...	...	...		Excision.
...	...	...	1	...	...	...	...	...	1	...	...	...		Excision.
...	...	...	1	...	...	...	...	...	...	1	...	...		
...	1	1	...	...	...	...	...	...	1	1	...	...		Excision 1. Left at own request 1.
...	4	1	...	...	...	...	...	...	5	...	...	...		
...	...	1	2	...	...	...	...	...	3	...	...	...		
...	...	2	...	...	...	...	...	...	2	...	...	...		
...	4	15	2	...	...	...	...	...	13	2	1	5		Erysipelas 2. See Special Table II.
...	...	2	...	...	...	...	...	...	2	...	...	...		
1	...	...	...	...	...	...	...	...	...	...	1	...		Operation not advised.
...	...	1	...	...	...	...	...	...	1	...	...	...		Excision. Interval since first operation 3 months.
...	...	1	...	...	...	...	...	...	...	...	...	1		
...	2	...	1	...	...	...	...	...	1	...	2	...		
1	...	...	...	...	...	...	...	...	...	...	1	...		
1	1	1	...	...	...	...	...	...	1	2	...	...		Excision 1. Not advised 2.

TABLE I.—Abstract, showing Diseases, &amp;c., in Classes,

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-15	Wks 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic	Not stated
<b>LOCAL DISEASES — con-</b>																		
<b>tinued.</b>																		
<b>Carcinoma—continued.</b>																		
<b>Squamous—</b>																		
Pharynx . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...
Œsophagus . . .	5	...	...	...	...	...	...	...	3	2	...	...	...	...	3	2	...	...
Superior maxilla . . .	2	1	...	...	...	...	...	...	2	1	...	...	...	1	1	1	...	...
Larynx . . .	3	...	...	...	...	2	1	...	...	...	...	...	...	...	1	...	...	2
Hand . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...
Leg . . .	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Vulva . . .	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...
Penis . . .	4	...	...	...	...	...	...	...	1	3	...	...	...	...	3	1	...	...
„ recurrent . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
Scrotum . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...
Infected glands . . .	18	...	...	...	...	...	...	...	11	7	...	...	1	1	3	7	6	...
Rodent ulcer . . .	1	3	...	...	...	...	1	1	...	2	...	...	...	...	...	...	4	...
„ recurrent . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
<b>Sarcoma—</b>																		
Super. maxilla, recurrent . . .	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	2	...	...
Inferior maxilla . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Clavicle . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...
Tonsil, recurrent . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
Neck . . .	3	...	...	...	...	...	1	1	...	1	...	...	...	...	1	1	1	...
Glands of neck . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...
Parotid . . .	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...
Kidney . . .	...	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Testis . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...
Abdominal wall . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Skin of thigh . . .	3	...	...	...	1	...	...	...	1	1	...	...	...	...	1	...	2	...
„ „ recurrent . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Tibia . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
Shoulder . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Nipple, recurrent . . .	4	...	...	...	...	...	4	...	...	...	...	...	...	...	...	2	2	...
Breast, recurrent . . .	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Subdeltoid . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...
<b>Tumours, nature undeter-</b>																		
<b>mined—</b>																		
Bladder . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
Œsophagus . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Abdomen . . .	1	4	...	...	...	1	...	2	1	1	...	...	...	...	3	1	1	...
Testis . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys.	Dys.	Wk.	Mos.	Mos.	Mos.	Mos.	Mos.	Mos.	Mos.	C.	R.	U.	D.	
1-1	1-1	2-4	1-1	2-4	4-6	6-8	8-10	10-12	+12					
1	...	...	...	...	...	...	...	...	...	...	...	1	...	
2	...	1	1	1	...	...	...	...	...	...	2	2	1	
1	1	...	1	...	...	...	...	...	...	...	1	2	...	Partial excision of upper jaw 1.
...	...	3	1	...	...	...	...	...	...	...	3	...	...	Tracheotomy 2. Readmission 1.
...	...	1	...	...	...	...	...	...	...	...	1	...	...	Dorsum excised.
...	...	...	1	...	...	...	...	...	...	...	1	...	...	Excised with glands in groin.
...	1	...	...	...	...	...	...	...	...	...	...	1	...	Pleurisy. No P.M.
...	1	3	...	...	...	...	...	...	...	...	4	...	...	
1	...	...	...	...	...	...	...	...	...	...	1	...	...	Left at own request.
...	...	1	...	...	...	...	...	...	...	...	1	...	...	Excision with testis and glands in groin. Occupation, sweep.
...	6	10	2	...	...	...	...	...	...	12	1	5	...	
1	1	2	...	...	...	...	...	...	...	3	...	1	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
1	1	...	...	...	...	...	...	...	...	...	2	...	...	Mixed-celled. Same case.
...	1	...	...	...	...	...	...	...	...	...	1	...	...	Undetermined.
...	...	1	...	...	...	...	...	...	...	...	1	...	...	Pulsating; multiple.
...	1	...	...	...	...	...	...	...	...	...	1	...	...	Round-celled. Removed 1 month previously.
1	...	1	...	1	...	...	...	...	...	1	1	1	...	Lympho-sarcoma 1; antitoxine treatment 1; undetermined 2.
1	...	...	...	...	...	...	...	...	...	...	1	...	...	Large round- and spindle-celled.
...	...	...	...	1	...	...	...	...	...	1	...	...	...	Round-celled, encapsuled.
...	1	...	...	...	...	...	...	...	...	...	1	...	...	Undetermined.
...	...	...	1	...	...	...	...	...	...	...	1	...	...	Undetermined; castration; stricture 1.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Myxo-sarcoma.
...	...	2	...	1	...	...	...	...	...	2	1	...	...	Spindle-celled 1, fibro-sarcoma 2, stricture and recto-vesical fistula 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Spindle-celled. Previous excision 1 year ago.
...	...	...	1	...	...	...	...	...	...	...	1	...	...	Myeloid of upper end. Unrecognised at time.
...	...	...	1	...	...	...	...	...	...	...	1	...	...	Melanotic.
...	2	2	...	...	...	...	...	...	...	3	1	...	...	Mixed-celled. Same case.
...	1	...	...	...	...	...	...	...	...	...	1	...	...	Amputation 18 months previously. Melanotic.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Myxo-sarcoma; excised.
...	...	...	1	...	...	...	...	...	...	...	1	...	...	
...	...	...	...	1	...	...	...	...	...	...	1	...	...	Carcinoma. Supra-pubic drainage.
...	...	...	...	...	1	...	...	...	...	...	1	...	...	Carcinoma. See Abstract.
...	1	3	1	...	...	...	...	...	...	1	3	1	...	Operation not advised 4. Cœliotomy; nothing found 1.
...	1	...	...	...	...	...	...	...	...	...	1	...	...	

TABLE I.—Abstract, showing Diseases, &amp;c., in Classes,

DISEASE.	Sex.		Age.									Duration before admission.								
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys 1-4	Dys 5-12	Wks 1-4	Mths 1-2	Mths 2-6	Mths 6-12	Chronic	Not stated.		
LOCAL DISEASES — con-																				
tinued.																				
Simple tumours—																				
Epulis . . .	...	5	1	...	1	1	...	1	1	...	...	1	...	...	...	1	3	...		
Fibroma . . .	...	2	...	...	...	...	...	...	1	1	...	...	...	...	...	...	2	...		
Myxoma . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...		
„ recurrent	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...		
Lipoma . . .	9	4	1	...	1	2	1	5	1	2	...	...	...	1	1	1	10	...		
Myxo-lipoma . .	1	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...		
Osteoma . . .	1	1	...	...	1	1	...	...	...	...	...	...	...	...	...	...	2	...		
Exostosis, humerus	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...		
„ fibula . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...		
„ metatarsus	...	2	...	...	1	...	...	...	1	...	...	...	...	...	1	...	1	...		
„ subungual	1	1	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...	1		
„ femur . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...		
Granular pharyngitis	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1		
Adenoids . . .	9	5	...	7	7	...	...	...	...	...	...	...	...	...	...	...	14	...		
Polypi, nasal . .	7	3	...	...	...	3	3	1	3	...	...	...	...	...	...	...	10	...		
„ aural . . .	2	1	...	...	...	2	1	...	...	...	1	...	...	...	...	...	2	...		
„ umbilical . .	2	...	...	...	...	1	1	...	...	...	...	...	1	...	...	...	1	...		
„ rectal . . .	1	2	...	2	1	...	...	...	...	...	...	1	...	...	2	...	...	...		
Papilloma, cheek	1	2	...	...	...	...	1	...	...	2	...	...	...	...	1	...	2	...		
„ larynx . . .	...	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	2	...		
„ buttock . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...		
„ scrotum . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...		
Nævus . . .	7	9	6	2	3	5	...	...	...	...	...	...	...	...	...	...	16	...		
Cavernous fibroma	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...		
Parotid tumour .	2	4	...	...	1	1	1	2	...	1	...	...	...	...	...	...	6	...		
Enchondroma . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...		
Fibro-adenoma of breast	...	11	...	...	3	5	3	...	...	...	...	...	...	...	1	2	8	...		
Myxo-adenoma of breast	...	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...		
Granuloma . . .	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...		
Urethral caruncle .	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...		
Melanoma . . .	1	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	2	...		
Keioid . . .	2	1	2	...	...	1	...	...	...	...	...	...	...	...	...	3	...	...		
Fibroid of uterus .	...	3	...	...	...	1	...	2	...	...	1	...	...	...	...	...	2	...		
Sacro-coccygeal tumour	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...		
Cysts—																				
Dermoid . . .	6	6	2	...	1	9	...	...	...	...	...	...	...	...	3	1	8	...		
Implantation dermoid	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...		
Neck . . .	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...		
Ranula . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...		



according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys.	Dys.	Wks	Mts	Mts	Mts	Mts	Mts	Mts	Mts	C.	R.	U.	D.	
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12	+12					
1	1	...	...	...	...	...	...	...	...	5	...	...	...	Upper jaw 3, lower jaw 2. Excision in all.
1	...	1	...	...	...	...	...	...	...	2	...	...	...	Scapula 1, thigh 1. Excised both.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Axilla. Excised.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Excised subdeltoid. Recurrence, interval 13 years.
...	8	5	...	...	...	...	...	...	...	12	...	1	...	Excision in 12. Frontal 1, multiple 1.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Subpectoral. Excision. In museum.
...	2	...	...	...	...	...	...	...	...	1	1	...	...	Septum 2; deflected septum 1.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Previous fracture, lower end.
...	...	2	...	...	...	...	...	...	...	2	...	...	...	Distal 1, proximal 1.
2	...	...	...	...	...	...	...	...	...	2	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Upper end. Trauma.
1	...	...	...	...	...	...	...	...	...	...	...	1	...	
10	2	2	...	...	...	...	...	...	...	14	...	...	...	Tonsils enlarged 1.
3	5	1	1	...	...	...	...	...	...	10	...	...	...	
1	2	...	...	...	...	...	...	...	...	2	1	...	...	
...	...	1	1	...	...	...	...	...	...	2	...	...	...	
1	2	...	...	...	...	...	...	...	...	3	...	...	...	
1	1	1	...	...	...	...	...	...	...	3	...	...	...	
...	...	1	...	1	...	...	...	...	...	2	...	...	...	Recurrent 1.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	...	1	...	...	...	...	...	1	...	...	...	
4	6	4	2	...	...	...	...	...	...	9	6	1	...	Readmissions 4.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	2	4	...	...	...	...	...	...	...	6	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Submaxillary.
...	4	5	2	...	...	...	...	...	...	11	...	...	...	Multiple 1, interstitial mastitis 1; with proliferating cysts 2; erysipelas 1.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Proliferating cysts.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Of forearm.
...	1	...	...	...	...	...	...	...	...	...	1	...	...	Transferred to Medical side.
1	1	...	...	...	...	...	...	...	...	2	...	...	...	Face.
...	2	1	...	...	...	...	...	...	...	2	...	1	...	Readmission 1. Lupus 1.
...	1	...	1	...	1	...	...	...	...	2	...	1	...	Pregnancy with intermural fibroid 1; subperitoneal 2; hydrosalpinx 1.
...	...	...	1	...	...	...	...	...	...	...	...	1	...	Same case as last year's.
1	6	5	...	...	...	...	...	...	...	11	...	1	...	Tuberculous glands 1.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Nature?
...	1	...	...	...	...	...	...	...	...	1	...	...	...	

TABLE I.—Abstract, showing Diseases, &amp;c., in Classes,

DISEASE.	Sex.		Age.								Duration before admission.									
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys 1-15	Dys 15-13	Wks 2-4	Mts 1-2	Mts 2-6	Mts 6-12	Chronic.	Not stated.		
LOCAL DISEASES — con-																				
tinued.																				
Cysts—continued.																				
Hygroma . . .	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...		
Sebaceous . . .	4	...	...	...	...	1	2	...	...	1	...	...	...	...	...	...	2	...		
Dentigerous . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1		
Appendicular . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...		
Breast . . .	...	3	...	...	...	...	2	1	...	...	...	...	...	...	...	3	...	...		
Cystic disease of breast.	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...		
Venous . . .	2	1	...	...	...	...	2	...	1	...	...	...	...	2	...	...	1	...		
Labial . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...		
Hydatid . . .	1	2	...	...	...	...	2	...	1	...	...	...	...	...	...	...	3	...		
Cystic adenoma of ovary	...	6	...	...	...	1	3	1	1	...	1	1	...	1	2	...	1	...		
„ suppurating	...	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...		
Ovarian dermoid . . .	...	2	...	...	1	...	...	...	1	...	...	...	...	...	...	...	2	...		
Pancreatic . . .	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...		
NERVOUS SYSTEM.																				
Traumatic meningocele . .	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1		
Division of nerves . . .	5	...	...	1	1	2	...	...	1	...	...	...	...	3	2	...	...	...		
Nerves involved in scar . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...		
General paralysis . . .	3	...	...	...	...	...	2	...	...	1	...	...	...	...	2	...	1	...		
Hemiplegia . . .	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...		
Headache . . .	2	...	...	...	1	1	...	...	...	...	...	...	1	...	...	...	1	...		
Trigeminal neuralgia . . .	...	2	...	...	...	...	...	...	1	1	...	...	...	...	...	...	2	...		
Facial paralysis . . .	1	1	...	2	...	...	...	...	...	...	...	...	...	2	...	...	...	...		
Fits . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...		
Cerebral hæmorrhage . . .	1	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...		
Hydrocephalus . . .	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...		
Delusions . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...		
Post-epileptic mania . . .	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1		
CIRCULATORY SYSTEM.																				
Aneurysm, carotid . . .	2	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	1	1		
„ subclavian . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...		
„ popliteal . . .	2	...	...	...	...	...	1	1	...	...	...	...	...	2	...	...	...	...		
Varicose veins . . .	45	21	...	...	13	38	12	3	...	...	1	1	1	3	4	1	48	7		
Varicocele . . .	69	...	...	...	39	24	4	2	...	...	...	...	2	3	9	4	19	32		
Thrombosis . . .	5	...	...	...	...	...	1	2	2	...	1	1	1	...	...	...	...	2		
Gangrene, senile . . .	2	3	...	...	...	...	...	...	3	2	1	...	2	1	...	...	...	1		

according to authorised *Nomenclature*—continued.

Duration of residence.										Result.				Remarks.
Dys	Dys	Wks	Mts	Mts	Mts	Mts	Mts	Mts	Mts	C	R	U	D	
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	12-15	15-18					
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Axilla.
1	2	1	...	...	...	...	...	...	...	4	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Second bicuspid (lower).
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Second bicuspid (upper).
...	...	2	1	...	...	...	...	...	...	3	...	...	...	Double 1.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	1	...	2	...	...	...	...	...	...	2	1	...	...	Readmission 1; leg 1, neck 1.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	1	...	1	...	...	...	1	...	2	...	Liver 1, liver and lung 1, abdomen and thorax 1.
...	...	6	...	...	...	...	...	...	...	6	...	...	...	
1	...	...	...	...	...	...	...	...	...	...	...	...	1	Loculated abscesses.
...	...	1	...	1	...	...	...	...	...	2	...	...	...	Fibroid of uterus with carcinoma of dermoid.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Cyst contained oxalate of lime calculi.
...	...	1	1	...	...	...	...	...	...	1	1	...	...	
...	...	1	1	4	...	...	...	...	...	5	...	...	...	Musculo-spiral 3, median 1, popliteal 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Median and ulnar.
1	1	1	...	...	...	...	...	...	...	...	3	...	...	Previous injury of head 2. Transferred to Medical 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
1	...	...	1	...	...	...	...	...	...	1	1	...	...	? Cerebral tumour 1.
...	1	...	1	...	...	...	...	...	...	1	1	...	...	
...	...	2	...	...	...	...	...	...	...	...	2	...	...	Previous operation for tuberculous glands 1; previous mastoid disease 1.
1	...	...	...	...	...	...	...	...	...	...	1	...	...	Previous depressed fracture of vault. No fits in hospital.
1	...	...	...	...	...	...	...	...	...	...	1	...	...	
...	...	1	...	...	...	...	...	...	...	...	1	...	...	
1	...	...	...	...	...	...	...	...	...	...	1	...	...	
...	1	...	...	...	...	...	...	...	...	...	1	...	...	Edema of lungs.
...	2	...	...	...	...	...	...	...	...	2	...	...	...	Fusiform 1, sacculated 1; doubtful history of syphilis. Previous aneurysm of brachial 1; operation not advised.
...	...	1	...	...	...	...	...	...	...	...	1	...	...	First stage; no syphilis. Operation not advised.
5	7	49	1	...	...	1	...	...	...	2	...	...	...	See "Stricture."
4	9	53	5	...	...	...	...	...	...	59	2	5	...	
...	...	3	...	...	...	...	...	...	...	63	1	5	...	Albuminuria 1, recurrent 1, hammer-toe 1, re-admission 1.
1	4	...	...	...	...	...	...	...	...	3	2	...	...	
...	...	2	2	1	...	...	...	...	...	2	1	1	1	

TABLE I.—Abstract, showing Diseases, &amp;c., in Classes.

DISEASE.	Sex.		Age.									Duration before admission.									
	M.	F.	-5	-10	10	-30	-40	-50	-60	+60	Dys. 1-1	Dys. 1-1	Wks. 2	Mos. 3	Mos. 4	Mos. 5	Mos. 6	Mos. 7	Chronic	No. of cases	
CIRCULATORY SYSTEM— <i>continued.</i>																					
Gangrene, embolic . . .	1	1						1					1								
„ septictraumatic . . .	1							1				1									
„ traumatic . . .	1			1									1								
„ cause ? . . .	1	1									1										
Hæmophilia . . .	2	1		1							1	1									
RESPIRATORY SYSTEM.																					
Empyema of antrum . . .	2	3				2	1		1	1								1	4		
Foreign body in air-passages . . .	1	2	2	1							3										
Tuberculous rhinitis . . .	1	1			1	1										1			1		
Inability to leave out tracheotomy tube . . .	1		1												1						
Dyspnœa . . .	3				1		2				1	1		1							
Syphilitic laryngitis . . .		4						4								3			1		
Old empyema . . .	4				2				1	1							1	3			
THYROID BODY.																					
Parenchymatous enlargement . . .	2	4			4	1		1							1	3	1	1			
Adenoma . . .	1	1				1				1									2		
Cyst . . .	1	3				2	1			1		1			1			2			
Multilobular enlargement . . .		1						1										1			
LYMPHATIC SYSTEM.																					
Lymphangitis . . .	1					1														1	
Simple adenitis . . .	8	3	3	1	3	2		2			2	2		1				2	4		
Sloughing glands . . .	1		1																	1	
Tuberculous adenitis . . .	37	45	3	13	26	28	7	1	1	3		1	3	12	14	2	49		1		
DIGESTIVE SYSTEM.																					
Stomatitis . . .	2	2	2		2						1	2		1							
Contraction of pharynx . . .	1	1				1			1										2		
Acute tonsillitis . . .	1	1				2					2										
Acute parotitis . . .	2		1			1							2								
Hernia—																					
Inguinal, reducible . . .	92	13	6	5	39	30	14	7	3	1	1	7	10	11	9	5	58		4		
„ chronic irreducible . . .	28	2	5		2	6	8	3	5	1	4				1	1	2	22			



according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys	Dys	Wks	Mts	Mts	Mts	Mts	Mts	Mts	Mts	C	R	U	D	
1	4	13	2	4	1	2	4	4	6	6-9	9-12	+12		
...	...	1	...	...	...	...	...	...	...	...	...	...	1	
1	...	...	...	...	...	...	...	...	...	...	...	...	1	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
1	...	...	...	...	...	...	...	...	...	...	...	...	1	
1	1	...	...	...	...	...	...	...	...	1	...	...	1	
...	2	3	...	...	...	...	...	...	...	1	3	...	1	All of antrum of Highmore. Fatal case: operation; senile emphysema.
1	2	...	...	...	...	...	...	...	...	2	...	...	1	In larynx 2, in bronchus 1. Fatal case: capillary bronchitis.
2	...	...	...	...	...	...	...	...	...	1	1	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Previous diphtheria.
...	1	1	...	1	...	...	...	...	...	...	3	...	...	Cause? Previous tracheotomy 1.
...	2	1	1	...	...	...	...	...	...	2	2	...	...	
...	...	3	1	...	...	...	...	...	...	1	2	1	...	
1	2	2	1	...	...	...	...	...	...	3	2	1	...	Readmission 1.
...	...	...	2	...	...	...	...	...	...	2	...	...	...	Multiple 1.
...	1	2	1	...	...	...	...	...	...	3	1	...	...	Lateral lobes enlarged 1.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	...	...	1	...	...	Of leg; ? elephantiasis.
2	3	3	3	...	...	...	...	...	...	10	1	...	...	Undescended testis 1.
1	...	...	...	...	...	...	...	...	...	...	...	...	1	Patent urachus; previous circumcision; caseous abdominal glands.
3	26	39	14	...	...	...	...	...	...	73	7	2	...	Readmissions 5. Erysipelas 2.
...	3	1	...	...	...	...	...	...	...	4	...	...	...	Mercurial 1, acute 3.
1	1	...	...	...	...	...	...	...	...	...	1	1	...	Syphilitic.
1	1	...	...	...	...	...	...	...	...	2	...	...	...	
...	2	...	...	...	...	...	...	...	...	2	...	...	...	1 case doubtful.
6	9	62	28	...	...	...	...	...	...	92	4	9	...	Undescended testis 8, hydrocele of cord 3, hydrocele of tunica vaginalis 2, hydrocele of sac 2. Hernia of ovary: double 1, varicocele 4, lipoma of cord 1. Double 9.
8	1	16	5	...	...	...	...	...	...	23	5	1	1	Lipoma of sac 1, stricture 1, retention 1, erysipelas 1.

TABLE I.—*Abstract, showing Diseases, &c., in Classes,*

DISEASE.	Sex.		Age.								Duration before admission.										Cured.	Not cured.		
	M	F	5	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170			180	190
DIGESTIVE SYSTEM—continued.																								
Hernia—																								
Inguinal, strangulated	26	6	3	1	3	6	6	4	5	4	31	1	...	...	...	...	...	...	...	...	...	...	...	...
Femoral	1	9	...	...	2	2	3	2	...	1	...	1	...	...	1	2	1	...	...	...	...	...	...	...
„ chronic irreducible	1	7	...	...	...	...	4	4	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...
„ strangulated	1	27	...	...	...	2	5	7	4	10	24	4	...	...	...	...	...	...	...	...	...	...	...	...
Umbilical, reducible	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ chronic irreducible	1	4	...	...	...	...	...	1	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ strangulated	2	1	...	...	...	...	...	2	1	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...
Ventral, irreducible	3	...	...	1	1	1	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...
„ strangulated	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Appendicitis, acute	5	2	...	...	1	5	1	...	...	...	4	1	1	1	...	...	...	...	...	...	...	...	...	...
„ chronic	6	1	...	...	1	3	3	...	...	...	...	...	...	1	2	2	2	...	...	...	...	...	...	...
„ sinus.	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Peritonitis	2	2	...	...	1	2	...	1	...	...	1	1	1	...	1	...	...	...	...	...	...	...	...	...
Intestinal obstruction	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Stricture of duodenum	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fæcal fistula	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Abdominal abscess	2	...	...	1	1	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...
Inflammatory tumour under liver	...	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Cholelithiasis	...	3	...	...	...	...	1	1	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...
Biliary fistula	...	3	...	...	...	...	3	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...
Suppuration about gall-bladder	...	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Hæmorrhoids	25	9	...	...	2	3	11	11	6	1	1	2	1	3	2	...	...	...	...	...	...	...	...	...
Fistula in ano	29	6	...	...	2	7	8	8	8	2	...	2	6	5	9	3	10	...	...	...	...	...	...	...
Prolapse of rectum	4	2	4	...	...	1	...	...	1	...	2	1	1	...	...	...	...	...	...	...	...	...	...	...
Ulceration of rectum	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Stricture of rectum	...	7	...	...	4	2	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Recto-vaginal fistula	...	2	...	...	1	...	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...
Anal fissure	2	2	...	...	1	1	2	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...
GENITO-URINARY SYSTEM.																								
Phimosis	...	6	...	4	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Urethritis	...	3	...	1	...	1	...	1	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
Paraphimosis	...	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Soft chancre	...	2	7	...	...	2	6	1	...	...	1	2	3	2	...	...	...	...	...	...	...	...	...	...
Phagedæna	...	3	...	...	1	1	...	...	1	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...
Venereal warts	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vulvitis	...	2	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vaginitis	...	22	...	1	8	13	...	...	...	...	1	2	3	4	3	2	1	6	...	...	...	...	...	...

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys	Dys	Wks	Mts	Mts	Mts	Mts	Mts	Mts	Mts	C.	R.	U.	D.	
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12						
6	8	16	3	...	...	...	...	...	24	...	8	...	...	See Special Table I.
1	1	7	1	...	...	...	...	...	7	2	1	...	...	
...	2	5	1	...	...	...	...	...	6	1	...	...	...	Fatal case: fatty heart.
6	8	14	...	...	...	...	...	...	19	...	9	...	...	See Special Table I.
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Congenital, fibrous symphysis, ectopia vesicae.
2	2	1	...	...	...	...	...	...	2	1	2	...	...	See 'Clin. Soc. Trans.,' Feb. 28th, 1896.
1	...	1	1	...	...	...	...	...	1	...	2	...	...	Obstructed 2, stercoral ulcers 1, perforation 2.
...	1	2	...	...	...	...	...	...	2	...	1	...	...	Readmission 1.
...	...	1	1	...	...	...	...	...	1	...	2	...	...	See Special Table I.
...	...	1	2	...	...	...	...	...	2	...	1	...	...	Omental 2, subperitoneal fat 1.
3	...	1	2	1	...	...	...	...	1	...	...	...	...	See Special Table I.
...	...	4	3	...	...	...	...	...	3	...	4	...	...	
...	...	...	...	1	...	...	...	...	6	...	1	...	...	
...	1	1	1	1	...	...	...	...	1	1	...	2	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	...	Enemata. No growth found.
...	...	1	...	...	...	...	...	...	1	...	1	...	...	Cause?
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Rectum and sigmoid flexure.
...	...	...	2	...	...	...	...	...	2	...	...	...	...	Spontaneous disappearance 1. <i>Vide 'Lancet,'</i>
...	...	...	...	...	...	...	...	...	1	...	...	...	...	Nov., 1895, 1.
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Cause?
...	...	2	1	...	...	...	...	...	1	1	1	...	...	
1	...	...	...	2	...	...	...	...	3	...	...	...	...	Same case.
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Previous hysterectomy. Transferred from Adelaide.
1	6	24	2	...	1	...	...	...	32	...	2	...	...	
1	16	14	4	...	...	...	...	...	30	3	2	...	...	
2	1	1	2	...	...	...	...	...	3	...	1	2	...	Previous Whitehead and patulous anus 1.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
1	1	1	2	2	...	...	...	...	7	...	...	...	...	Syphilitic 6; previous operation 1; prolapse 1.
...	...	2	...	...	...	...	...	...	2	...	...	...	...	
1	2	...	1	...	...	...	...	...	4	...	...	...	...	
1	4	1	...	...	...	...	...	...	6	...	...	...	...	
2	1	...	...	...	...	...	...	...	1	1	1	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	...	
...	4	4	1	...	...	...	...	...	8	1	...	...	...	Paraphimosis 1, vaginitis 5.
1	1	1	...	...	...	...	...	...	3	...	...	...	...	Paraphimosis 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	
...	1	1	...	...	...	...	...	...	2	...	...	...	...	
...	3	8	9	1	1	...	...	...	15	7	...	...	...	





according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-10	Wks. 1-2	Mths 1-2	Mths 3-4	Mths 5-6	Mths 7-9	Mths 10-12	Mths 13-12	Mths 13-12	C.	R.	U.	D.	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Catheter tied in.
2	13	19	12	6	1	1	...	...	...	35	12	1	6	Abdominal aneurysm 1.
...	1	...	1	1	...	...	...	...	...	3	...	...	...	Readmission 1.
...	...	...	1	...	...	...	...	...	...	...	1	...	...	
...	1	...	...	...	...	...	...	...	...	...	1	...	...	
2	10	7	6	2	...	...	...	...	...	18	3	6	...	
...	...	1	1	1	...	...	...	...	...	2	1	...	...	
...	1	1	1	...	...	...	...	...	...	1	1	1	...	Supra-pubic cystotomy, cured, 1.
...	1	...	...	...	...	...	...	...	...	...	1	...	...	
...	2	2	...	...	...	...	...	...	...	1	1	2	...	Cause?
...	...	1	...	...	...	...	...	...	...	...	1	...	...	
1	...	...	...	...	...	...	...	...	...	1	...	...	...	Extracted through urethra.
...	...	7	1	1	...	...	...	...	...	7	1	1	...	Enlarged prostate 1.
...	...	2	...	...	...	...	...	...	...	2	...	...	...	
...	...	...	1	1	...	...	...	...	...	2	...	...	...	
...	...	1	3	...	...	...	...	...	...	3	1	...	...	
...	...	1	1	1	...	...	...	...	...	3	...	...	...	
...	3	3	3	...	...	...	...	...	...	6	3	...	...	
...	...	1	...	...	...	...	...	...	...	...	...	1	...	Acute.
1	...	4	1	...	...	...	...	...	...	6	...	...	...	
...	2	3	...	...	...	...	...	...	...	4	1	...	...	Excision in 4; lipoma of cord 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Excision.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Excision.
1	2	10	4	...	...	...	...	...	...	11	1	5	...	Reducible inguinal hernia 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	2	2	...	...	...	...	...	...	2	3	...	...	
1	1	3	1	...	...	...	...	...	...	2	2	2	...	Readmission 1.
...	1	1	...	...	...	...	...	...	...	2	...	...	...	
...	...	1	1	...	...	...	...	...	...	...	2	...	...	Same case. To be readmitted.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Possibly tuberculous.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Transferred to Medical with phthisis.
...	2	1	...	...	...	...	...	...	...	2	1	...	...	
...	...	2	1	...	...	...	...	...	...	3	...	...	...	Same case.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Amputation of breast.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	1	...	...	...	...	...	...	2	...	...	...	
...	1	1	...	...	...	...	...	...	...	1	...	1	...	Upper epiphysis in both. Pyæmia 1.

TABLE I.—Abstract, showing Diseases, &amp;c., in Classes,

DISEASE.	Sex.		Age.									Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60		Dys. 1-4	Dys. 5-13	Wks. 2-4	Mths 1-2	Mths 2-6	Mths 6-12	Chronic	Not stated.
<b>OSSEOUS SYSTEM — con-</b>																			
<i>tinued.</i>																			
<i>Acute epiphysitis—cont.</i>																			
Femur . . . .	2	...	1	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1
Tibia . . . .	2	...	...	...	2	...	...	...	...	...	...	2	...	...	...	...	...	...	...
<i>Subacute epiphysitis—</i>																			
Humerus . . . .	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...
<i>Periostitis—</i>																			
Tibia . . . .	2	...	...	...	...	2	...	...	...	...	...	...	2	...	...	...	...	...	...
Femur . . . .	...	2	...	...	...	1	...	1	...	...	...	...	...	1	1	...	...	...	...
<i>Osteitis—</i>																			
Skull . . . .	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...
Tibia . . . .	...	2	...	...	2	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Femur . . . .	3	1	...	2	1	...	...	1	...	...	...	...	...	...	...	...	...	3	1
Toe . . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Metacarpus . .	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
<i>Caries—</i>																			
Malar . . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Rib . . . .	11	3	...	4	4	2	1	1	2	...	...	1	1	1	1	7	2	2	...
Olecranon . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Scapula . . . .	1	1	...	1	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...
Sacrum . . . .	1	2	...	2	...	1	...	...	...	...	...	1	...	1	...	1	...	...	...
Ilium . . . .	2	...	...	...	1	1	...	...	...	...	...	...	...	...	1	...	...	1	...
Ischium . . . .	2	...	1	...	...	...	...	1	...	...	...	...	...	...	2	...	...	...	...
Femur . . . .	2	1	...	...	3	...	...	...	...	...	...	...	...	...	1	...	...	2	...
Tibia . . . .	4	1	1	...	4	...	...	...	...	...	...	...	...	...	1	1	...	1	2
Tarsus . . . .	3	1	2	2	...	...	...	...	...	...	...	...	...	...	1	2	...	...	1
Metatarsus . .	1	1	1	1	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...
Phalanges . . .	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
<i>Necrosis—</i>																			
Frontal . . . .	2	3	...	...	1	1	1	...	...	2	...	...	...	1	...	...	...	3	1
Nasal . . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Parietal . . . .	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Sternum . . . .	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...
Inferior maxilla	6	5	4	...	1	2	1	...	3	...	...	...	...	1	1	4	1	2	2
Humerus . . . .	5	1	1	1	3	...	1	...	...	...	...	...	...	...	...	1	4	1	...
<i>Other</i>																			
Olecranon . . .	1	1	...	...	...	...	1	...	...	1	...	1	...	...	...	...	1	...	...
Radius . . . .	1	2	1	...	2	...	...	...	...	...	...	...	...	...	...	...	2	1	...
Phalanges . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Ilium . . . .	2	...	...	...	2	...	...	...	...	...	...	...	...	1	1	...	...	...	...

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys	Dys	Wks	Mts	Mrs	Mrs	Mrs	Mts	Mts	Mts	C.	R.	U.	D.	
1	45-13	2	1	1	1	1	6	6	9	11	1			
2	...	...	...	...	...	...	...	...	...	...	...	...	...	Upper 1, lower 1. Pyæmia 2.
1	...	...	1	...	...	...	...	...	...	1	...	...	...	Upper 2. Pyæmia 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Upper extremity; nature?
...	2	...	...	...	...	...	...	...	...	1	1	...	...	Syphilitic 1.
...	...	1	1	...	...	...	...	...	...	2	...	...	...	Syphilitic 2, synovitis of knee 1.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Sclerosis of vault. Previous fall on head.
...	1	...	1	...	...	...	...	...	...	2	...	...	...	Subacute; nature?
...	1	2	...	1	...	...	...	...	...	1	2	1	...	Syphilitic 2, tuberculous 2. Readmission 1.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Tuberculous.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Tuberculous.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	4	8	2	...	...	...	...	...	...	8	6	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Post-typhoid.
...	...	2	...	...	...	...	...	...	...	1	1	...	...	
1	...	2	...	...	...	...	...	...	...	2	...	1	...	Albuminuria 1.
...	...	1	...	1	...	...	...	...	...	1	1	...	...	
...	...	1	1	...	...	...	...	...	...	1	1	...	...	
...	1	...	1	1	...	...	...	...	...	3	...	...	...	
...	...	1	3	1	...	...	...	...	...	2	3	...	...	
...	...	1	3	...	...	...	...	...	...	2	2	...	...	
...	1	1	...	...	...	...	...	...	...	2	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Transferred to Medical.
...	1	3	1	...	...	...	...	...	...	3	2	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	
2	2	6	1	...	...	...	...	...	...	4	4	3	...	
1	1	1	2	1	...	...	...	...	...	3	3	...	...	Tuberculous 1; radius also affected 2. Readmission 1.
1	...	1	...	...	...	...	...	...	...	2	...	...	...	
...	2	1	...	...	...	...	...	...	...	2	1	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	1	...	...	...	...	...	...	2	...	...	...	

TABLE I.—*Abstract, showing Diseases, &c., in Classes,*

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys 1-4	Dys. 5-13	W.L. 2-4	Mts. 1-2	Mts. 3-4	Mts. 5-11	Chronic	Not studied
<b>OSSEOUS SYSTEM — con-</b>																		
<i>tinued.</i>																		
<i>Necrosis—continued.</i>																		
Femur . . . . .	12	2	...	...	7	3	4	...	...	...	...	...	...	1	...	4	7	2
Tibia . . . . .	7	3	...	1	6	1	1	1	...	...	...	...	...	2	2	2	4	...
Tarsus . . . . .	2	...	1	...	1	...	...	...	...	...	...	...	...	1	...	1	...	...
Metatarsus . . . .	2	3	...	...	3	...	2	...	...	...	...	...	1	...	...	2	2	...
Phalanges . . . . .	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...
<i>Acute necrosis—</i>																		
Superior maxilla . .	...	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Ilium . . . . .	1	2	...	...	2	1	...	...	...	...	1	1	...	1	...	...	...	...
Femur . . . . .	2	1	...	...	3	...	...	...	...	...	...	2	1	...	...	...	...	...
Tibia . . . . .	1	1	...	1	1	...	...	...	...	...	2	...	...	...	...	...	...	...
Metatarsus . . . . .	1	1	...	1	1	...	...	...	...	...	1	1	...	...	...	...	...	...
<b>ARTICULAR SYSTEM.</b>																		
<i>Shoulder—</i>																		
Tuberculous arthritis	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Synovitis . . . . .	...	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
<i>Wrist—</i>																		
Tuberculous arthritis	4	2	...	...	...	2	3	1	...	...	...	...	...	1	...	1	4	...
Ankylosis . . . . .	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
<i>Elbow—</i>																		
Tuberculous arthritis	7	1	2	...	3	...	3	...	...	...	1	...	1	...	...	1	5	...
Gonorrhœal arthritis	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...
Ankylosis . . . . .	2	...	...	...	1	1	...	...	...	...	...	...	...	...	1	...	1	...
<i>Hip—</i>																		
Tuberculous arthritis	32	21	8	12	22	8	2	1	...	...	2	1	6	10	8	6	19	1
Septic arthritis . .	...	2	...	1	1	...	...	...	...	...	...	...	1	1	...	...	...	...
Ankylosis . . . . .	5	5	...	1	7	2	...	...	...	...	...	...	...	...	...	1	9	...
<i>Knee—</i>																		
Tuberculous arthritis	22	17	6	4	15	5	4	1	1	...	...	...	1	5	3	8	19	3
Syphilitic . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
Gonorrhœal synovitis	2	...	...	...	...	2	...	...	...	...	...	1	...	...	1	...	...	...
" arthritis . . . . .	1	1	...	...	...	2	...	...	...	...	...	1	...	1	...	...	...	...
Pyæmic arthritis . .	...	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...
Charcot's disease . .	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Loose bodies . . . .	5	...	...	...	...	1	2	1	1	...	...	...	...	3	1	...	1	...
Synovitis . . . . .	2	3	...	1	3	...	...	1	...	...	1	1	...	2	...	...	1	...



according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys.	Dys.	Wks.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
1	1-5-13	2	4	1	2	4	4-6	6-9	9-12	+12				
2	4	2	4	2	...	...	...	...	...	5	7	2	...	
...	4	4	1	1	...	...	...	...	...	7	3	...	...	
...	1	...	1	...	...	...	...	...	...	2	...	...	...	
...	1	2	1	1	...	...	...	...	...	3	2	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	1	1	1	...	...	...	...	...	3	...	...	...	
1	...	1	...	1	...	...	...	...	...	1	1	...	1	Pyæmia.
1	...	...	1	...	...	...	...	...	...	1	...	...	1	
...	...	1	...	1	...	...	...	...	...	2	...	...	...	
...	1	...	...	...	...	...	...	...	...	...	1	...	...	Caries sicca; 2 inches shortening.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Cause?
...	1	2	2	1	...	...	...	...	...	5	...	1	...	Readmission 1.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	
...	4	3	1	...	...	...	...	...	...	2	6	...	...	Caries superior maxilla 1. Readmissions 3.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Abscess. Incision.
...	1	...	...	1	...	...	...	...	...	2	...	...	...	Previous gonorrhœal rheumatism 1; previous fracture of humerus 1.
...	8	14	18	8	4	1	...	...	...	50	2	1	...	Erysipelas 1.
...	...	...	1	1	...	...	...	...	...	1	1	...	...	
...	2	2	4	2	...	...	...	...	...	7	2	...	1	
...	5	12	11	10	1	...	...	...	...	10	24	4	1	Addison's disease, fatal, 1; diphtheria, and transferred to Medical, 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Congenital syphilis.
...	1	1	...	...	...	...	...	...	...	2	...	...	...	
...	...	...	1	...	1	...	...	...	...	1	1	...	...	
...	...	...	...	1	...	...	...	...	...	1	...	...	...	Incision and drainage. Puerperal.
...	...	...	1	...	...	...	...	...	...	...	1	...	...	
...	1	2	2	...	...	...	...	...	...	4	1	...	...	
...	3	1	...	...	1	...	...	...	...	2	2	...	1	König's disease. Tubercular epiphysitis 1; cause unknown 4.

TABLE I.—Abstract, showing Diseases, &amp;c., in Classes,

DISEASE.	Sex.		Age.										Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+ 60	Dys. 1-4	Dys. 5-13	Wks 2-4	Mths 1-2	Mths 3-6	Mths 6-12	Chronic	Not stated.		
ARTICULAR SYSTEM— <i>cont.</i>																				
<i>Knee—continued.</i>																				
Ankylosis . . .	15	6	...	3	8	2	6	1	1	...	...	...	...	...	3	...	18	...		
<i>Ankle—</i>																				
Tuberculous arthritis	8	10	7	4	2	2	3	...	...	...	1	...	2	2	1	3	9	...		
Gonorrhœal arthritis	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...		
Septic arthritis . .	...	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...		
<i>Tarsus—</i>																				
Tuberculous arthritis	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...		
<i>Phalangeal joints—</i>																				
Septic arthritis . .	2	...	...	...	...	1	...	1	...	...	...	...	...	...	1	...	1	...		
<i>Sacro-iliac disease</i>	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...		
<i>Adhesions in joints</i>	6	5	...	2	...	1	7	1	...	...	...	...	...	...	7	2	2	...		
AUDITORY SYSTEM.																				
Otalgia . . .	...	2	...	1	...	1	...	...	...	...	...	...	1	1	...	...	...	...		
Acute myringitis . .	...	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...		
Otitis externa . . .	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...		
„ media—	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Suppurative . . .	7	10	4	2	8	1	2	...	...	...	1	1	5	...	2	1	3	4		
„ and mastoid caries	16	18	10	7	10	4	1	1	1	...	1	6	3	6	6	...	9	3		
„ „ and sinus	1	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	2	...		
thrombosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
„ „ „ and extra-	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...		
dural abscess	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
„ „ and cerebellar	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...		
abscess	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
DISEASES OF SPINE.																				
Caries, cervical . .	2	4	1	2	3	...	...	...	...	...	...	...	...	1	1	2	2	...		
dorsal . . .	15	5	3	5	5	1	4	1	1	...	...	1	...	...	3	3	11	2		
„ lumbar . . .	13	6	2	3	3	8	2	1	...	...	...	...	2	3	5	3	5	1		
Cervical curvature	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...		
BURSITIS.																				
Acute . . .	8	17	...	5	9	3	5	1	2	...	5	10	6	4	...	...	...	...		
Tuberculous . . .	1	1	...	...	...	...	2	...	...	...	...	...	...	...	1	1	...	...		
Chronic . . .	3	7	...	...	1	4	4	...	1	...	...	...	...	1	4	1	4	...		

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. 12-18	Mts. 18-24	C.	R.	U.	D.	
...	1	4	10	5	1	...	...	...	...	8	9	3	1	Ankylosis of hip 1, ankles 1.
...	5	2	9	1	1	...	...	...	...	5	13	...	...	Tarsus involved 3, caries of os calcis 1.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Previous compound Pott's fracture.
...	1	...	...	...	...	...	...	...	...	...	...	1	...	Abscess and incision.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Abscess and incision.
...	1	1	...	...	...	...	...	...	...	1	1	...	...	Great toe 2; traumatic in both.
...	...	...	...	1	...	...	...	...	...	1	...	...	...	Abscess. Admitted again in 1896.
1	6	2	2	...	...	...	...	...	...	4	5	2	...	
...	2	...	...	...	...	...	...	...	...	2	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
3	9	1	3	1	...	...	...	...	...	3	10	4	...	Aural polyp 1, adenoids 1, erysipelas 1. Readmission 1.
1	7	19	6	1	...	...	...	...	...	7	24	...	3	Fatal cases: septic meningitis 2 (perforation of tegmen tympani 1); gangrene of lung from inflammation along carotid sheaths 1; erysipelas 1.
...	...	2	...	...	...	...	...	...	...	2	...	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Temporo-sphenoidal, due to perforation of tegmen tympani.
...	...	1	...	...	...	...	...	...	...	...	...	1	...	Sinus not thrombosed. Fatal from secondary abscess.
...	2	1	3	...	...	...	...	...	...	4	2	...	...	Cervico-dorsal 2, abscess 1, paraplegia 1.
1	6	7	3	3	...	...	...	...	...	18	1	1	...	Displaced kidney 1, dorsal abscess 8, lumbar 2, iliac 1. Fatal case: paraplegia. Partial P.M. only.
...	3	2	9	4	...	...	1	...	...	1	16	...	2	Lumbo-sacral 1, lumbar abscess 10, iliac 2, gluteal 3, psoas 2; amyloid disease 1; acute phthisis 1.
...	1	...	...	...	...	...	...	...	...	...	...	1	...	Cause?
2	17	5	1	...	...	...	...	...	...	25	...	...	...	Bursa patellæ in all.
...	1	1	...	...	...	...	...	...	...	2	...	...	...	Thigh 1, shoulder 1.
1	6	2	1	...	...	...	...	...	...	7	3	...	...	Syphilitic 1, bursa patellæ 6, infra-patella bursa 1, olecranon 1, semi-membranosus 1, subsartorial 1.





according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys.	Dys.	Wks.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
1-4	5-13	2-4	1-2	2-4	1-6	6-9	1-12	1-12						
2	3	4	...	...	...	...	...	...	...	6	...	3	...	Wrist 6, compound 1, flexor tendon of finger 1; perineus tertius 2; readmission 1.
1	1	1	1	...	...	...	...	...	...	1	3	...	...	Ankle 3, wrist 1; tubercular 2, traumatic 2.
...	...	...	...	1	...	...	...	...	...	1	...	...	...	
...	1	5	7	9	1	...	...	...	...	17	2	4	...	
1	8	3	7	2	1	1	...	...	...	14	8	1	...	Paralytic 2, double 9; hyperextension of knees 1; equino-valgus 1; readmissions 3.
1	9	3	1	1	...	...	...	...	...	15	...	...	...	Pes cavus 8, potential cavus 1; double 3.
...	1	...	1	...	...	...	...	...	...	1	1	...	...	Hysterical 1, congenital 1.
2	6	1	...	...	...	...	...	...	...	8	1	...	...	Readmissions 3.
...	1	1	1	...	...	...	...	...	...	2	...	...	...	Hammer-toe 1.
1	8	8	...	...	...	...	...	...	...	16	1	...	...	Double 7.
1	5	7	8	2	1	...	1	...	...	14	9	2	...	
1	...	2	2	...	...	...	...	...	...	5	...	...	...	Lower extremity in all.
...	2	...	1	1	1	...	...	...	...	4	1	...	...	
1	1	1	...	...	...	...	...	...	...	2	...	1	...	
1	...	1	...	...	...	...	...	...	...	1	...	1	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	...	...	...	1	...	
...	...	...	1	...	...	...	...	...	...	...	...	1	...	
...	...	1	1	...	...	...	...	...	...	1	1	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	
1	1	4	...	...	...	...	...	...	...	5	...	...	1	Fatal: gastro-intestinal catarrh.
1	1	3	2	...	...	...	...	...	...	1	...	6	...	
...	...	2	1	...	...	...	...	...	...	1	...	1	1	Fatal: marasmus.
...	3	4	8	...	...	...	...	...	...	4	4	7	...	
...	...	1	1	...	...	...	...	...	...	1	1	...	...	Cervical auricle 1, spinal curvature 1.
...	...	...	1	...	...	...	...	...	...	...	...	1	...	
...	...	1	1	...	...	...	...	...	...	1	1	...	...	Same case.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	

TABLE I.—Abstract, showing Diseases, &amp;c., in Classes,

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic	Not stated
<b>MALFORMATIONS — con-</b>																		
<i>tinued.</i>																		
Congenital dislocation of hip	5	1	6	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...
Congenital absence of fibula	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Spina bifida . . .	3	3	5	1	...	...	...	...	...	...	...	1	...	2	2	...	1	...
<b>DISEASES OF SKIN AND</b>																		
<b>SUBCUTANEOUS TISSUES.</b>																		
Sinus . . . . .	23	6	2	5	9	6	3	3	1	...	...	...	...	1	7	10	4	7
Cellulitis . . . .	41	20	1	4	13	16	8	14	4	1	15	16	10	9	2	...	1	8
„ of neck . . . .	2	...	...	...	...	...	1	1	...	...	2	...	...	...	...	...	...	...
Ulcer . . . . .	18	20	1	1	8	5	7	8	6	2	2	1	3	3	4	4	17	4
Tuberculosis of skin	11	17	1	4	10	9	2	2	...	...	...	...	...	...	...	2	26	...
<i>Abscess—</i>																		
Face and scalp . .	4	2	1	3	2	...	...	...	...	...	...	1	1	...	...	...	...	4
Neck . . . . .	24	22	8	6	14	7	4	4	2	1	7	14	13	7	1	...	...	4
Alveolar . . . . .	11	9	5	2	4	6	...	3	...	...	4	4	5	5	...	...	...	2
Breast . . . . .	...	8	...	...	...	4	3	1	...	...	...	...	4	3	1	...	...	...
Abdominal wall . .	1	2	1	...	...	1	...	...	...	1	...	...	2	...	1	...	...	...
Thoracic wall . . .	3	...	...	...	1	2	...	...	...	...	...	...	1	...	2	...	...	...
Back . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Pelvic . . . . .	...	2	...	...	1	...	1	...	...	...	...	...	...	...	...	...	2	...
Lumbar . . . . .	2	1	...	1	2	...	...	...	...	...	...	...	...	2	...	1	...	...
Psoas . . . . .	2	...	...	...	1	...	...	...	1	...	...	...	...	...	1	...	1	...
Iliac . . . . .	3	...	...	1	1	1	...	...	...	...	...	1	1	1	...	...	...	...
Labial . . . . .	...	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...
Spermatic cord . .	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Ischio-rectal . . .	11	2	...	...	2	5	3	...	3	...	5	1	5	...	...	...	2	...
Perinæal . . . . .	11	...	...	1	1	1	4	4	...	...	1	3	4	1	...	...	...	2
Retro-pharyngeal .	1	1	2	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Upper extremity . .	12	5	5	...	5	6	...	1	...	...	2	7	4	1	...	...	1	2
Sacral . . . . .	1	2	2	...	...	1	...	...	...	...	...	1	...	1	...	...	1	...
Lower extremity . .	37	22	10	14	20	9	2	1	1	2	5	10	16	12	5	1	4	6
Eczema . . . . .	4	6	1	1	3	...	2	1	1	1	...	4	...	2	...	...	1	3
Carbuncle . . . .	11	1	...	...	...	...	2	4	4	2	1	2	3	4	1	...	...	1

according to authorised Nomenclature—continued.

Duration of residence.									Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts 1-2	Mts 2-4	Mts 4-6	Mts. 6-9	Mts. 9-12	Mts. 12 +12	C.	R	U.	D.	
1	3	1	...	...	1	...	...	...	6	...	...	...	Readmissions 4.
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	2	2	2	...	...	...	...	...	1	1	1	3	Fatal: marasmus 2, escape of cerebro-spinal fluid 1, high temperature 1.
7	8	9	5	...	...	...	...	...	14	15	...	...	
8	22	17	10	4	...	...	...	...	58	1	...	2	Upper extremity 40; face 1, pelvis 1; remainder lower extremity.
1	...	...	1	...	...	...	...	...	1	...	...	1	
5	12	12	7	1	...	1	...	...	23	10	4	1	Tuberculous 2, syphilitic 5, perforating (?) 1.
2	6	16	3	1	...	...	...	...	13	15	...	...	
2	3	1	...	...	...	...	...	...	4	1	1	...	
6	24	16	...	...	...	...	...	...	46	...	...	...	
4	12	4	...	...	...	...	...	...	20	...	...	...	
1	6	1	...	...	...	...	...	...	8	...	...	...	Submammary 1, multilocular and chronic 1.
...	...	1	1	...	...	1	...	...	1	2	...	...	Arthritis of hip 1. Cause? in all.
...	1	2	...	...	...	...	...	...	3	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	1	...	...	...	...	1	...	...	1	Cause unknown. Fatal case: amyloid; no P.M.
...	...	2	1	...	...	...	...	...	3	...	...	...	Cause?
...	...	...	2	...	...	...	...	...	2	...	...	...	Cause?
...	...	1	1	1	...	...	...	...	2	1	...	...	Erysipelas 1. Cause?
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	Tuberculous.
...	7	3	3	...	...	...	...	...	11	2	...	...	
3	6	1	1	...	...	...	...	...	10	1	...	...	
...	1	1	...	...	...	...	...	...	2	...	...	...	Spine free in both.
2	9	5	1	...	...	...	...	...	17	...	...	...	
...	2	...	1	...	...	...	...	...	2	...	1	...	Refused treatment 1.
3	27	26	3	...	...	...	...	...	48	9	1	1	
1	4	3	2	...	...	...	...	...	10	...	...	...	
1	5	3	3	...	...	...	...	...	10	1	...	1	Fatal case: diabetes. Temporary glycosuria 1.





according to authorised *Nomenclature*—continued.

Duration of residence.										Result.				Remarks
Des.	Des.	Wks.	Mos.	Mos.	Mos.	Mos.	Mos.	Mos.	Mos.	C.	R.	I.	D.	
1-4	5-10	1-4	1-4	2-4	4-6	6-9	9-11	11-12	12-12					
...	...	1	...	...	...	...	...	...	...	...	1	...	...	Occupation, diver.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	...	...	1	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
1	1	...	...	...	...	...	...	...	...	1	...	1	...	Fall downstairs 1.
...	...	1	...	...	...	...	...	...	...	...	1	...	...	Transferred to Medical.
2	...	...	1	...	...	...	...	...	...	1	1	1	...	Transferred to Medical.
...	1	2	...	...	...	...	...	...	...	1	2	...	...	Suppurating 1.
...	1	...	...	...	...	...	...	...	...	...	1	...	...	
...	1	...	...	...	...	...	...	...	...	...	1	...	...	Transferred to Medical.
...	1	...	...	...	...	...	...	...	...	...	1	...	...	Transferred to Medical.
...	1	1	...	...	...	...	...	...	...	1	...	1	...	Transferred to Medical 1.
1	...	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	...	...	1	...	...	
1	6	2	...	...	...	...	...	...	...	3	4	2	...	
1	...	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	2	4	...	...	...	...	...	...	...	7	...	...	
...	...	1	...	...	...	...	...	...	...	...	1	...	...	From the knee.
...	1	...	...	...	...	...	...	...	...	...	1	...	...	From patella.
12	14	4	...	...	...	...	...	...	...	15	7	8	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
										1616	560	214	129	

TABLE II.—*Abstract, showing Injuries, &c., in*

INJURIES.	Sex.		Age.										Duration of life & loss of					
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Hrs. 1-6	Hrs. 7-12	Hrs. 13-24	Dys. 1-3	Dys. 4-6	Dys. 7-9	Dys. 10-12	Dys. 13-15
<b>GENERAL INJURIES.</b>																		
Burns . . . . .	32	31	26	11	12	1	4	3	4	2	60	...	1	...	...	...	2	...
Scalds . . . . .	24	20	30	9	2	...	...	3	...	...	13	...	...	1	...	...	...	...
<b>LOCAL INJURIES.</b>																		
<i>Injuries of head and face—</i>																		
Scalp wounds . . . . .	21	8	1	2	5	4	5	3	5	4	24	...	1	2	...	...	2	...
Contusions of face . . . . .	3	1	1	...	1	...	1	1	...	...	4	...	...	...	...	...	...	...
Wound of tongue . . . . .	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Hæmatoma of scalp . . . . .	1	2	2	...	...	...	...	...	...	1	...	...	...	...	...	...	2	...
Wound of face . . . . .	3	1	...	...	...	2	...	1	1	...	3	...	...	...	...	...	1	...
Wound of tonsil . . . . .	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...
Cephalhæmatoma . . . . .	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Concussion . . . . .	64	20	11	21	15	14	10	5	4	4	75	...	...	3	3	3	...	...
<i>Fractures of vault of skull—</i>																		
Simple . . . . .	2	2	4	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...
Simple depressed . . . . .	...	2	1	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...
Compound linear . . . . .	6	...	1	...	...	...	1	3	...	1	6	...	...	...	...	...	...	...
Compound depressed . . . . .	3	1	...	1	...	2	1	...	...	...	4	...	...	...	...	...	...	...
Punctured . . . . .	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Fractures of base . . . . .	15	1	1	2	1	3	2	3	4	...	15	...	...	1	...	...	...	...
<i>Fractures of base and vertex</i>																		
Simple . . . . .	6	...	...	1	...	1	2	1	1	...	6	...	...	...	...	...	...	...
Compound depressed . . . . .	...	1	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...
<i>Fractures of face bones—</i>																		
Compound of superior maxilla . . . . .	2	...	...	...	1	...	...	...	1	...	2	...	...	...	...	...	...	...
Inferior maxilla . . . . .	6	...	...	...	...	2	1	2	1	...	3	...	...	2	1	...	...	...
<i>Injuries of neck—</i>																		
Abrasions . . . . .	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Incised wounds . . . . .	6	3	...	...	1	3	1	...	2	2	9	...	...	...	...	...	...	...
<i>Injuries of thorax—</i>																		
Contusions . . . . .	6	...	1	...	2	...	...	2	...	1	5	...	...	1	...	...	...	...
Lacerated wounds . . . . .	2	...	...	...	2	...	...	...	...	...	1	...	...	1	...	...	...	...
Penetrating wound . . . . .	1	1	...	...	1	1	...	...	...	...	1	...	...	1	...	...	...	...

*Classes, according to authorised Nomenclature.*

Duration of residence.									Result.				Remarks.
Dys.	Dys.	Wks.	Mos.	Mts.	Mos.	Mts.	Mts.	Mts.	C	R.	U.	D.	
1-4	5-13	2-4	1-2	2-4	4-6	6-9	10-12	+12					
23	16	10	9	4	1	...	...	...	38	...	...	25	Erysipelas 1.
9	14	15	4	2	...	...	...	...	42	...	...	2	
12	10	3	4	...	...	...	...	...	28	...	...	1	Bullet wound 1; rupture of lateral sinus 1; traumatic synovitis of knee 1; fracture of radius (lower $\frac{1}{3}$ ) 1; fracture of ribs 1; erysipelas 1.
...	3	1	...	...	...	...	...	...	4	...	...	...	Epistaxis 2; plugging posterior nares 1.
1	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	2	...	...	...	...	...	...	3	...	...	...	Suppurating 1.
1	3	...	...	...	...	...	...	...	4	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	No history of trauma.
45	31	7	1	...	...	...	...	...	83	1	...	...	Colles' fracture 1; erysipelas 1.
3	...	1	...	...	...	...	...	...	2	...	...	2	
1	1	...	...	...	...	...	...	...	2	...	...	...	
1	3	2	...	...	...	...	...	...	5	...	...	1	Parietal 4; frontal 2; tetanus hydrophobicus 1.
...	...	2	2	...	...	...	...	...	4	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	
3	5	7	1	...	...	...	...	...	12	1	...	3	Ruptured spleen 1; fractured ribs 1; at own request 1.
5	1	...	...	...	...	...	...	...	...	...	...	6	Ruptured spleen 1.
1	...	...	...	...	...	...	...	...	...	...	...	1	
...	1	1	...	...	...	...	...	...	2	...	...	...	Alveolar margin 1; depression of nasal bone 1.
2	2	2	...	...	...	...	...	...	6	...	...	...	Double fracture 1; alveolar margin 1.
1	...	...	...	...	...	...	...	...	1	...	...	...	
2	4	2	1	...	...	...	...	...	6	...	...	3	Divided ulna and median nerves 1; tetanus 1.
4	1	1	...	...	...	...	...	...	6	...	...	...	Hæmothorax 1.
...	...	...	2	...	...	...	...	...	2	...	...	...	Shotgun wound 1; bullet penetrating wound 1; pneumo- and hydrothorax 1.
1	1	...	...	...	...	...	...	...	2	...	...	...	Emphysema 1; pneumothorax 1.

TABLE II.—*Abstract, showing Injuries, &c., in*

INJURIES.	Sex.		Age.										Duration before admission.					
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Hrs. 1-6	Hrs. 7-12	Hrs. 13-24	Dys. 1-3	Dys. 3-6	Dys. +6		
<i>LOCAL INJURIES—continued.</i>																		
<i>Injuries of thorax—continued.</i>																		
Fractured sternum . . . . .	...	1	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...
Fractured ribs . . . . .	9	3	1	...	1	1	2	1	4	2	10	...	...	2	...	...	...	...
<i>Injuries of spine—</i>																		
Concussion and sprains . . . . .	10	1	...	1	1	1	5	3	...	...	11	...	...	...	...	...	...	...
Fractured spine . . . . .	8	1	...	...	1	1	3	4	...	...	8	...	...	...	...	...	1	...
<i>Injuries of abdomen—</i>																		
Contusion of abdomen . . . . .	20	7	11	7	7	1	...	...	1	...	27	...	...	...	...	...	...	...
Ruptured kidney . . . . .	9	...	...	1	3	2	1	2	...	...	9	...	...	...	...	...	...	...
„ liver . . . . .	1	1	...	...	...	...	...	...	1	1	2	...	...	...	...	...	...	...
„ spleen . . . . .	4	1	1	...	2	...	1	1	...	...	4	...	...	...	1	...	...	...
„ gut . . . . .	2	...	...	...	1	...	...	...	1	...	1	...	1	...	...	...	...	...
„ bladder . . . . .	...	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...
„ perinaeum . . . . .	...	2	...	...	...	1	1	...	...	...	...	...	...	...	...	...	2	...
Edema of scrotum . . . . .	...	2	1	...	1	...	...	...	...	...	1	1	...	...	...	...	...	...
Hæmatoma of external genitalia . . . . .	1	3	...	1	...	1	2	...	...	...	1	...	...	2	...	1	...	...
Wound of scrotum . . . . .	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Wound of vagina . . . . .	...	2	1	...	1	...	...	...	...	...	2	...	...	...	...	...	...	...
Ruptured urethra . . . . .	9	...	...	5	3	...	1	...	...	...	8	...	1	...	...	...	...	...
Fracture of pelvis . . . . .	3	2	...	1	...	...	1	1	...	2	5	...	...	...	...	...	...	...
<i>Injuries of upper extremity—</i>																		
Wound of shoulder . . . . .	1	1	...	...	...	1	1	...	...	...	1	...	...	...	...	...	1	...
Hæmatoma of shoulder . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Wound of forearm . . . . .	12	7	...	3	4	5	6	...	1	...	16	...	...	...	1	2	...	...
„ of hand . . . . .	3	3	...	...	1	2	1	2	...	...	6	...	...	...	...	...	...	...
Dislocation of humerus . . . . .	5	...	...	...	...	...	...	...	3	2	1	...	1	...	...	...	3	...
„ of radius and ulna . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
„ of radius . . . . .	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...



## Classes, according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys.	Dys.	Wks.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
1-4	5-12	2-4	1-2	2-4	4-6	6-8	8-12	1-12						
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Fracture between manubrium and gladiolus; upper portion displaced backwards. Direct violence. Fractured ribs 1.
2	6	4	...	...	...	...	...	...	...	12	...	...	...	See "Fractured femur;" "Ruptured liver."
7	3	...	1	...	...	...	...	...	...	11	...	...	...	? Fractured spine 1.
...	1	1	4	...	...	1	2	...	...	3	4	1	1	
19	8	...	...	...	...	...	...	...	...	26	...	...	1	
2	4	2	1	...	...	...	...	...	...	7	...	...	2	Fractured ribs. Ruptured liver 1; compound fracture of tibia and fibula 1. Hematuria in all.
2	...	...	...	...	...	...	...	...	...	...	...	...	2	Fractured ribs. Fractured radius and ulna 1; humerus 1; spleen 1; kidney 1.
2	...	...	1	2	...	...	...	...	...	3	...	...	2	Ruptured liver 2; kidney 2; splenectomy 3. <i>Vide</i> Clinical Society, 1896. See "Punctured wound of skull."
2	...	...	...	...	...	...	...	...	...	...	...	...	2	
1	...	...	...	...	...	...	...	...	...	...	...	...	1	
...	2	...	...	...	...	...	...	...	...	1	...	1	...	
1	1	...	...	...	...	...	...	...	...	2	...	...	...	Traumatic in both.
...	3	...	1	...	...	...	...	...	...	4	...	...	...	Vulva 2; perinaeum 1; suppurating 1.
1	...	...	...	...	...	...	...	...	...	1	...	...	...	
1	...	...	1	...	...	...	...	...	...	2	...	...	...	Rupture of recto-vaginal septum 1.
1	1	5	2	...	...	...	...	...	1	9	...	...	...	
2	...	1	1	1	...	...	...	...	...	3	...	...	2	Ruptured bladder 1; compound comminuted fracture of femur, tibia, and fibula; fracture of tibia and fibula; double fracture of femur 1.
...	2	...	...	...	...	...	...	...	...	2	...	...	...	Bullet wound.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
5	9	3	1	1	...	...	...	...	...	19	...	...	...	Radial nerve divided 1; median 2; ulna 3. Division of tendons 9.
2	1	1	2	...	...	...	...	...	...	6	...	...	...	Bullet wound 1.
2	2	...	1	...	...	...	...	...	...	3	1	1	...	Subcoracoid in all. See "Fractured humerus."
...	1	...	...	...	...	...	...	...	...	...	1	...	...	Inwards; partial reduction; 14 days' reduction.
1	...	...	...	...	...	...	...	...	...	1	...	...	...	Head forwards.

TABLE II.—*Abstract, showing Injuries, &c., in*

INJURIES.	Sex.		Age.								Duration before admission.					
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+6	Hrs. 1-6	Hrs. 7-12	Hrs. 13-24	Dys. 1-3	Dys. 3-6	Dys. +6
<b>LOCAL INJURIES—continued.</b>																
<i>Injuries of upper extremity—continued.</i>																
Dislocation of ulna . . . . .	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
„ of phalanges, compound . . . . .	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
Fracture of clavicle . . . . .	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
„ of scapula . . . . .	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Separation of epiphysis of humerus . . . . .	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
Fracture of humerus . . . . .	9	1	...	1	...	2	2	2	...	3	10	...	...	...	...	...
Do. do., compound . . . . .	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...
Do. do., comp. comminuted . . . . .	3	...	...	1	1	...	1	...	...	...	3	...	...	...	...	...
Fracture of radius and ulna . . . . .	2	1	...	...	1	1	...	...	...	1	3	...	...	...	...	...
Do. of ulna . . . . .	4	...	...	1	...	1	1	1	...	...	3	...	...	...	...	1
Do. radius, compound . . . . .	...	1	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Do. metacarpus . . . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...
Do. do., compound . . . . .	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
Do. do., comp. comminuted . . . . .	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...
Do. of phalanges, compound . . . . .	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
Do. do., comp. comminuted . . . . .	5	1	1	1	2	2	...	...	...	...	6	...	...	...	...	...
Amputation of phalanges . . . . .	2	...	...	...	...	...	1	...	1	...	2	...	...	...	...	...
<i>Injuries of lower extremity—</i>																
Hæmatoma of sacrum . . . . .	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
„ of buttock . . . . .	2	...	...	...	...	2	...	...	...	...	1	...	...	...	...	1
„ of thigh . . . . .	3	...	...	...	1	1	...	1	...	...	2	...	...	...	...	1
„ of leg . . . . .	2	1	...	...	1	1	1	...	...	...	3	...	...	...	...	...
Contusions of buttock . . . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...
„ of hip . . . . .	3	2	...	...	1	...	...	2	...	2	1	...	...	3	...	1
„ of thigh . . . . .	4	...	...	...	...	2	...	...	1	1	2	...	...	2	...	...
„ of leg . . . . .	2	2	1	...	...	1	...	...	1	1	...	...	...	2	1	1
Wounds of thigh . . . . .	4	...	...	2	...	1	...	...	1	...	3	...	...	1	...	...

## Classes, according to authorised Nomenclature—continued.

Duration of residence.									Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.	
...	...	1	...	...	...	...	...	...	...	1	...	...	Lower end forwards.
1	...	...	...	...	...	...	...	...	1	...	...	...	Index and middle fingers, proximal phalanges.
1	...	...	...	...	...	...	...	...	1	...	...	...	Middle third.
...	...	1	...	...	...	...	...	...	1	...	...	...	Spine; fracture of clavicle of outer third.
...	...	1	...	...	...	...	...	...	...	...	1	...	Ruptured bronchus 1.
3	4	2	1	...	...	...	...	...	10	...	...	...	Subcoracoid dislocation 1. See "Ruptured kidney."
...	...	1	...	...	...	...	...	...	1	...	...	...	Middle. Direct violence.
...	1	1	1	...	...	...	...	...	3	...	...	...	Upper third 1, lower third 2.
...	2	1	...	...	...	...	...	...	3	...	...	...	Fracture of internal malleolus 1; direct violence 1; indirect violence 2. See "Ruptured liver."
...	3	1	...	...	...	...	...	...	4	...	...	...	Upper third 1; olecranon 2, compound olecranon 1, by direct violence; dislocation of ulna 1. See "Fractured femur."
...	1	...	...	...	...	...	...	...	1	...	...	...	Colles' fracture; small wound; indirect violence. See "Fractured femur."
...	1	...	...	...	...	...	...	...	1	...	...	...	Upper third.
...	1	...	...	...	...	...	...	...	1	...	...	...	Second, third, fourth, and fifth. Direct violence.
...	...	1	...	...	...	...	...	...	1	...	...	...	Lower third, fourth, and fifth. Direct violence.
1	...	...	...	...	...	...	...	...	1	...	...	...	Direct violence.
1	2	3	...	...	...	...	...	...	6	...	...	...	Terminal, in chaff-cutting machine. Fatal case circular saw accident. Albuminuria. Death under anæsthetic (ether); failure of respiration. No P.M.
2	...	...	...	...	...	...	...	...	1	...	...	1	
1	...	...	...	...	...	...	...	...	1	...	...	...	Suppurating 1.
1	...	...	1	...	...	...	...	...	2	...	...	...	
...	3	...	...	...	...	...	...	...	3	...	...	...	Rheumatoid hip 1.
...	3	...	...	...	...	...	...	...	3	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	
2	1	2	...	...	...	...	...	...	4	1	...	...	
...	4	...	...	...	...	...	...	...	3	1	...	...	Knee opened 1. Secondary hæmorrhage from superficial femoral artery 1. Erysipelas 1.
...	3	...	1	...	...	...	...	...	4	...	...	...	
...	2	...	...	1	1	...	...	...	2	1	...	1	





## Classes, according to authorised Nomenclature—continued.

Duration of residence.									Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.	
2	1	...	...	1	...	...	...	...	4	...	...	...	Erysipelas 1.
...	...	2	1	...	...	...	...	...	3	...	...	...	Rheumatoid arthritis of hip with normal
...	6	7	...	...	...	...	...	...	13	...	...	...	baker's cysts 1; ruptured ligaments 3; all of knee.
...	2	...	1	...	...	...	...	...	2	1	...	...	Knee 2; ankle 1.
1	...	...	1	...	...	...	...	...	2	...	...	...	Dorsal in both.
...	...	1	...	...	...	...	...	...	1	...	...	...	
2	30	19	14	5	1	...	...	...	68	2	...	1	Fractured patella double star-shaped 1; fractured radius 1; fractured olecranon 1; fractured tibia and fibula 1; fractured ribs 1. See "Fractured pelvis"
1	...	...	1	...	...	...	...	...	1	...	...	1	Fractured tibia and fibula 1; fractured ribs 1. See "Fractured pelvis."
...	2	6	9	...	...	...	...	...	6	10	...	1	
1	3	22	12	4	...	...	...	...	39	3	...	...	
7	53	15	3	...	...	...	...	...	78	...	...	...	Dislocation of ankle backwards 2.
...	1	2	1	...	...	...	...	...	4	...	...	...	
...	1	5	2	...	...	...	...	...	7	...	...	1	Dislocation of ankle 1; pyæmia 1.
2	...	2	2	1	...	...	...	...	5	...	...	2	
7	9	1	...	...	...	...	...	...	17	...	...	...	
...	...	4	...	...	...	...	...	...	4	...	...	...	
3	16	4	...	...	...	...	...	...	23	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	Lower third. Indirect violence.
...	...	2	...	...	...	...	...	...	1	1	...	...	
2	3	...	1	...	1	...	...	...	4	...	3	...	1 month 1; 1 year 2; 3 weeks 2; 6 weeks 1; 4 months 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	Tibia and fibula lower third; 13 weeks.
...	...	...	1	1	...	...	...	...	...	1	1	...	4 months; 4 years.
									712	30	8	66	
									1646	560	214	129	
									2358	590	222	195	
									3365				

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	-60
REMOVAL OF TUMOURS AND NEW GROWTHS.										
Amputation of breast . . . . .	1	5	...	...	1	...	2	1	2	...
"    "    with glands . . . . .	...	36	...	...	...	...	5	16	12	3
Recurrent of breast . . . . .	...	6	...	...	...	2	1	2	...	1
Recurrent in axilla . . . . .	...	1	...	...	...	1	...	...	1	...
Colectomy . . . . .	1	2	...	...	...	1	...	...	...	2
Excision of rectum . . . . .	5	2	...	...	...	...	1	3	...	3
Epithelioma of cheek . . . . .	1	...	...	...	...	...	...	...	1	...
"    of temporal region . . . . .	1	...	...	...	...	...	...	...	...	1
"    of ear . . . . .	1	...	...	...	...	...	1	...	...	...
"    of scalp . . . . .	1	...	...	...	...	...	1	...	...	...
"    of lip . . . . .	5	2	...	...	...	...	...	1	3	3
"    of chin . . . . .	1	1	...	...	...	...	...	...	1	1
"    of tongue . . . . .	18	...	...	...	...	...	...	4	7	7
"    "    recurrent . . . . .	2	...	...	...	...	...	...	...	2	...
"    of floor of mouth, recurrent . . . . .	2	...	...	...	...	...	...	...	...	2
"    of fauces . . . . .	1	...	...	...	...	...	...	...	1	...
"    of tonsil . . . . .	1	...	...	...	...	...	...	1	...	...
"    "    recurrent . . . . .	1	...	...	...	...	...	...	...	1	...
"    of palate . . . . .	1	...	...	...	...	...	...	1	...	...
"    of hand . . . . .	1	...	...	...	...	...	...	...	...	1
"    of secondary glands . . . . .	13	1	...	...	...	...	...	...	8	6
"    of penis . . . . .	4	...	...	...	...	...	...	...	1	3
"    of scrotum . . . . .	1	...	...	...	...	...	...	1	...	...
"    of superior maxilla . . . . .	...	1	...	...	...	...	...	...	1	...
Rodent ulcer . . . . .	1	3	...	...	...	...	1	2	...	1
Sarcoma of upper jaw . . . . .	...	3	...	...	1	...	...	...	2	...
"    of glands of neck . . . . .	1	...	...	...	...	...	...	1	...	...
"    of testis . . . . .	1	...	...	...	...	...	...	...	...	1
"    of neck . . . . .	1	...	...	...	...	...	1	...	...	...
"    of parotid . . . . .	...	1	...	...	...	...	...	...	...	1

*Surgical Operations.*

Duration of residence after operation.										Result.				Remarks.
Dys.	Dys.	Wks.	Mos.	Mos.	Mos.	Mos.	Mos.	Mos.	Mos.	C.	R.	C.	D.	
1-4	5-12	1-4	1-2	2-4	4-6	6-8	9-12	+12						
...	4	1	1	...	...	...	...	...	...	4	1	1	...	Tuberculous 1; syphilitic 1; Paget's disease of nipple 1; chronic abscess 2; chronic interstitial mastitis 1. Transferred to Medical 1.
...	3	26	6	1	...	...	...	...	...	34	...	...	2	Erysipelas 4, including 2 fatal cases. Scirrhus carcinoma 35; adenoma 1.
...	2	4	...	...	...	...	...	...	...	4	2	...	...	Axillary glands 1; supra-clavicular glands 1.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Fatal case.
1	...	1	...	...	1	...	...	...	...	...	2	...	1	Transverse colon with involvement of small gut. Resection of both; immediate circular enterorrhaphy by Czerny-Lembert suture. Excision of splenic flexure with artificial anus 1.
1	2	1	3	...	...	...	...	...	...	5	...	...	2	Carcinoma of rectum 6. Peritoneum opened in 2 (modified Kraské 1). Fatal: general peritonitis 1; asthenia 1; sloughing of wound 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Commenced as sebaceous cyst.
...	6	1	...	...	...	...	...	...	...	7	...	...	...	Recurrent 1; jaw involved 1; upper jaw 1.
...	...	1	1	...	...	...	...	...	...	2	...	...	...	Commenced as sebaceous cyst.
1	5	12	...	...	...	...	...	...	...	13	...	...	5	Lingual ligatured 6; double lingual ligature 1; fatal pneumonia 2; broncho-pneumonia 1; erysipelas 2; portion of jaw removed 2.
...	...	2	...	...	...	...	...	...	...	2	...	...	...	
...	1	1	...	...	...	...	...	...	...	...	2	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Kocker's operation 1.
...	1	...	...	...	...	...	...	...	...	...	...	...	1	Kocker's operation 1. Fatal secondary hæmorrhage.
1	...	...	...	...	...	...	...	...	...	...	...	...	1	Internal carotid tied.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	7	5	2	...	...	...	...	...	...	9	5	...	...	
...	1	3	...	...	...	...	...	...	...	4	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Castration.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Orbital plate left.
...	1	2	1	...	...	...	...	...	...	4	...	...	...	
1	1	1	...	...	...	...	...	...	...	...	3	...	...	Recurrent. Mixed-celled 1; myeloid 1; readmission 1.
...	...	...	...	...	...	...	...	...	...	...	1	...	...	Lympho-sarcoma.
1	...	...	...	...	...	...	...	...	...	...	...	...	1	Undetermined. Bronchitis.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Spindle-celled. Encapsuled.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Round-celled. Encapsuled.

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Sex.		Age.								
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	
REMOVAL OF TUMOURS AND NEW GROWTHS											
—continued.											
Sarcoma of abdominal wall . . . . .	...	1	...	...	...	1	...	...	...	...	
„ of thigh . . . . .	1	...	...	...	...	...	...	...	...	1	
„ „ recurrent . . . . .	...	1	...	...	...	1	...	...	...	...	
„ of skin of leg . . . . .	1	...	...	...	1	...	...	...	...	...	
„ of buttocks . . . . .	1	...	...	...	...	...	...	...	1	...	
„ melanotic, of shoulder . . . . .	1	...	...	...	...	1	...	...	...	...	
„ „ „ recurrent . . . . .	2	...	...	...	...	...	2	...	...	...	
„ of subdeltoid . . . . .	1	...	...	...	...	...	...	...	...	1	
Epulis . . . . .	...	5	1	...	1	1	...	1	1	...	
Fibroma . . . . .	...	2	...	...	...	...	...	...	1	1	
Myxoma . . . . .	2	...	...	...	...	1	...	1	...	...	
Lipoma . . . . .	4	8	1	...	1	2	1	4	1	2	
Myxo-lipoma . . . . .	1	...	...	...	...	...	...	...	...	1	
Exostosis . . . . .	2	3	...	...	3	2	...	...	...	...	
Adenoids . . . . .	9	6	...	6	7	2	...	...	...	...	
Tonsils . . . . .	...	1	...	...	...	1	...	...	...	...	
Polypi . . . . .	12	5	...	2	1	5	5	1	3	...	
Papilloma . . . . .	2	5	...	2	1	1	1	...	...	2	
Nævus . . . . .	3	6	5	2	...	2	...	...	...	...	
Cavernous fibroma . . . . .	1	...	...	...	...	...	...	...	...	1	
Parotid tumours . . . . .	2	4	...	...	1	1	1	2	...	1	
Enchondroma . . . . .	...	1	...	...	...	1	...	...	...	...	
Fibro-adenoma . . . . .	...	12	...	...	3	5	3	1	...	...	
Granuloma . . . . .	1	...	...	...	...	1	...	...	...	...	
Mole . . . . .	1	1	...	...	...	1	...	...	...	1	
Keloid . . . . .	1	1	1	...	...	1	...	...	...	...	
Hysterectomy . . . . .	...	2	...	...	...	...	...	1	1	...	
Cysts, hydatid . . . . .	2	2	...	...	...	...	3	...	1	...	
„ dermoid . . . . .	5	7	1	...	1	8	2	...	...	...	
„ ranula . . . . .	...	1	...	...	...	1	...	...	...	...	
„ hygroma . . . . .	...	1	1	...	...	...	...	...	...	...	
„ sebaceous . . . . .	4	...	...	...	...	1	2	...	...	1	
„ dentigerous . . . . .	1	...	...	1	...	...	...	...	...	...	
„ appendicular . . . . .	...	1	...	...	...	1	...	...	...	...	
„ breast . . . . .	...	5	...	...	...	...	...	4	1	...	
„ blood . . . . .	1	1	...	...	...	...	1	...	1	...	
„ labial . . . . .	...	1	...	...	...	1	...	...	...	...	
„ ovarian . . . . .	...	6	...	...	...	1	3	1	1	...	
„ „ dermoid . . . . .	...	2	...	...	1	...	...	...	1	...	
„ cervical . . . . .	1	...	...	...	...	...	1	...	...	...	
„ Marrant Baker, of knee . . . . .	1	1	...	...	1	...	...	1	...	...	



## Operations—continued.

Duration of residence after operation.									Result.				Remarks.
Dys.	Dys.	Wks.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C	R.	U.	D.	
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+1.					
...	...	...	1	...	...	...	...	...	1	...	...	...	Spindle-celled.
...	...	1	...	...	...	...	...	...	1	...	...	...	Spindle-celled. Deep fascia involved.
...	1	...	...	...	...	...	...	...	1	...	...	...	Muscles involved.
...	1	...	...	...	...	...	...	...	1	...	...	...	Fibro-sarcoma.
...	...	...	1	...	...	...	...	...	1	...	...	...	Fibro-sarcoma.
...	...	1	1	...	...	...	...	...	...	1	...	...	Axillary glands involved and excised.
...	1	1	...	...	...	...	...	...	...	2	...	...	In scar and glands. Same case as last.
...	...	1	...	...	...	...	...	...	1	...	...	...	Myxo-sarcoma.
3	2	...	...	...	...	...	...	...	5	...	...	...	
1	1	...	...	...	...	...	...	...	2	...	...	...	Thigh and scapula.
...	1	...	1	...	...	...	...	...	2	...	...	...	Subdeltoid 1; axillary 1.
1	11	...	...	...	...	...	...	...	12	...	...	...	Pedunculated 3; fibro-lipoma 3.
...	1	...	...	...	...	...	...	...	1	...	...	...	Subpectoral.
2	3	1	...	...	...	...	...	...	5	...	...	...	Subungual 2, metatarsal 2; humeral 1; fibular 1.
12	2	1	...	...	...	...	...	...	15	...	...	...	
1	...	...	...	...	...	...	...	...	1	...	...	...	
13	3	1	...	...	...	...	...	...	16	1	...	...	Nasal 10, aural 3, umbilical 1.
2	1	3	1	...	...	...	...	...	7	...	...	...	Larynx 2, thyrotomy 2, scrotum 1.
1	6	2	...	...	...	...	...	...	9	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	
2	4	...	...	...	...	...	...	...	6	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	Submaxillary.
1	7	2	1	1	...	...	...	...	12	...	...	...	Myxo-adenoma 1, with proliferating cyst 3, erysipelas 1.
1	...	...	...	...	...	...	...	...	1	...	...	...	
1	1	...	...	...	...	...	...	...	2	...	...	...	
...	1	1	...	...	...	...	...	...	2	...	...	...	
...	...	2	...	...	...	...	...	...	2	...	...	...	Intra-peritoneal 1, extra-peritoneal 1.
1	...	1	...	1	1	...	...	...	1	...	...	3	Abdomen 2, liver and lungs 1. Fatal cases: hæmorrhage from cavity and bronchitis 1; bronchitis 1.
2	9	1	...	...	...	...	...	...	12	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	Multilocular of axilla.
1	3	...	...	...	...	...	...	...	4	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	5	...	...	...	...	...	...	5	...	...	...	
...	...	1	1	...	...	...	...	...	2	...	...	...	Leg 1, neck 1.
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	6	...	...	...	...	...	...	6	...	...	...	
...	...	1	1	...	...	...	...	...	2	...	...	...	Carcinoma in wall 1; myomectomy 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	Nature?
...	...	1	...	1	...	...	...	...	...	2	...	...	Tuberculous 2, subsequent amputation of thigh 1.

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Sex.		Age.								
	M.	F.	-5	10	-20	-30	-40	-50	-60	+ 60	
REMOVAL OF TUMOURS AND NEW GROWTHS —continued.											
Cysts, pancreatic. . . . .	...	1	...	...	...	...	1	...	...	...	
RESPIRATORY SYSTEM.											
Drainage of antrum . . . . .	2	2	...	...	...	2	1	...	...	1	
Resection of rib . . . . .	4	1	...	...	1	1	...	...	3	...	
Tracheotomy . . . . .	13	5	3	2	1	...	4	4	4	...	
Laryngotomy . . . . .	2	...	...	1	...	...	...	...	1	...	
Intubation . . . . .	1	...	1	...	...	...	...	...	...	...	
Aspiration of pleura . . . . .	3	1	...	...	3	...	1	...	...	...	
Thyrotomy . . . . .	...	1	...	...	...	...	...	1	...	...	
Removal of inferior turbinate bones . . . . .	2	...	...	...	...	2	...	...	...	...	
NERVOUS SYSTEM.											
Meningocele . . . . .	1	...	1	...	...	...	...	...	...	...	
Resection and suture of nerves . . . . .	4	2	...	2	1	2	1	...	...	...	
Suture of nerves . . . . .	5	2	...	...	1	1	4	...	1	...	
Section of posterior spinal nerves . . . . .	2	...	...	...	...	...	...	...	2	...	
Stretching of nerves . . . . .	2	2	...	...	...	1	...	...	2	1	
Anastomosis of nerves . . . . .	1	...	...	...	1	...	...	...	...	...	
Exploration of nerve . . . . .	...	1	...	...	1	...	...	...	...	...	
Laminectomy . . . . .	2	...	...	...	...	2	...	...	...	...	
Section of lingual nerve . . . . .	1	...	...	...	...	...	...	1	...	...	
VASCULAR SYSTEM.											
Ligation of superficial femoral artery . . . . .	3	...	...	...	...	1	1	1	...	...	
„ of common femoral artery . . . . .	1	...	...	...	...	1	...	...	...	...	
„ of internal jugular vein . . . . .	1	2	1	1	...	1	...	...	...	...	
Varicose veins, excision . . . . .	28	14	...	...	9	21	10	2	...	...	
Varicocele, excision . . . . .	53	...	...	...	25	20	6	2	...	...	
„ subcutaneous ligature . . . . .	19	...	...	...	10	9	...	...	...	...	
LYMPHATIC SYSTEM.											
Excision of tuberculous glands . . . . .	35	45	2	11	28	25	8	2	1	3	
„ of inflamed glands . . . . .	7	2	2	...	2	2	3	...	...	...	
THYROID GLAND.											
Excision of isthmus . . . . .	...	2	...	...	...	...	...	2	...	...	
„ of cyst . . . . .	1	2	...	...	...	2	1	...	...	...	

## Operations—continued.

Duration of residence after operation.										Result.				Remarks
Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. 12-12	Mts. 12-12	C.	R.	U.	D.	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Stump sutured to abdominal wall.
1	3	...	...	...	...	...	...	...	...	...	3	...	1	All of antrum of Highmore. Fatal, senile emphysema.
...	...	4	1	...	...	...	...	...	...	3	2	...	...	
3	4	7	4	...	...	...	...	...	...	7	5	1	5	
1	...	...	1	...	...	...	...	...	...	...	...	1	1	Tetanus 1. Dyspnoea cause ?.
1	...	...	...	...	...	...	...	...	...	1	...	...	...	Scald of pharynx 1.
2	2	...	...	...	...	...	...	...	...	1	...	...	3	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Syphilitic necrosis of cricoid.
1	1	...	...	...	...	...	...	...	...	2	...	...	...	Osteomata of septum 1; tuberculous rhinitis 1.
...	...	...	1	...	...	...	...	...	...	...	1	...	...	Tapped.
...	1	2	2	1	...	...	...	...	...	3	3	...	...	Median 1, musculo-spiral 2, external popliteal 2, ulnar 1.
...	3	3	1	...	...	...	...	...	...	7	...	...	...	Ulnar 3, median 3, radial 1.
...	...	1	...	1	...	...	...	...	...	...	2	...	...	Same case.
...	1	...	2	...	1	...	...	...	...	...	3	1	...	Spinal accessory 2, sciatic 1, supra-orbital 1.
...	...	1	...	...	...	...	...	...	...	...	...	1	...	Facial to spinal accessory.
...	...	1	...	...	...	...	...	...	...	...	...	1	...	Previous division.
...	...	...	1	1	...	...	...	...	...	...	2	...	...	Fractured spine 1.
...	...	1	...	...	...	...	...	...	...	...	1	...	...	Carcinoma of tongue.
...	...	...	2	...	1	...	...	...	...	3	...	...	...	Popliteal aneurysm 2; second hæmorrhage 1; vein also 1.
...	...	...	...	1	...	...	...	...	...	...	...	...	1	Vein also tied. Wound during osteotomy.
1	...	1	1	...	...	...	...	...	...	2	...	...	1	Mastoid disease in all.
...	16	26	...	...	...	...	...	...	...	42	...	...	...	
...	23	28	2	...	...	...	...	...	...	53	...	...	...	
...	7	9	3	...	...	...	...	...	...	19	...	...	...	Double 2.
2	46	26	5	1	...	...	...	...	...	74	6	...	...	Erysipelas 2.
1	2	3	3	...	...	...	...	...	...	7	1	...	1	Fatal: mastoid disease and gangrene of lung.
...	1	1	...	...	...	...	...	...	...	2	...	...	...	
...	2	1	...	...	...	...	...	...	...	3	...	...	...	

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
<b>THYROID GLAND—continued.</b>										
Excision of adenoma . . . . .	1	1	...	...	...	1	...	...	...	1
Partial excision . . . . .	...	1	...	...	1	...	...	...	...	...
<b>DIGESTIVE SYSTEM.</b>										
<b>Herniotomy—</b>										
Inguinal . . . . .	3	1	...	1	...	...	1	1	...	1
Femoral . . . . .	...	6	...	...	...	1	1	1	1	2
<b>Herniotomy and radical cure—</b>										
Inguinal . . . . .	20	2	1	...	3	5	2	3	5	3
Femoral . . . . .	1	21	...	...	...	1	4	6	3	8
Umbilical . . . . .	1	2	...	...	...	...	...	2	1	...
Ventral . . . . .	...	1	...	...	...	...	1	...	...	...
<b>Radical cure—</b>										
Inguinal . . . . .	106	13	4	5	40	37	21	10	2	...
Femoral . . . . .	2	12	...	...	2	2	6	3	...	1
Umbilical . . . . .	2	3	1	1	1	...	...	...	2	...
Intestinal anastomosis . . . . .	...	1	...	...	...	1	...	...	...	...
Circular enterorrhaphy . . . . .	1	...	...	...	1	...	...	...	...	...
Suture of intestine . . . . .	1	...	...	...	...	...	...	...	1	...
Appendectomy . . . . .	8	1	...	1	2	3	3	...	...	...
Incision of appendicitic abscess . . . . .	3	6	...	...	3	3	1	...	2	...
<b>General peritonitis from appendicitis .</b>										
Appendicitic sinus . . . . .	4	...	...	...	2	1	...	...	1	...
Irrigation of abdomen . . . . .	...	1	...	...	1	...	...	...	...	...
Irrigation of abdomen . . . . .	1	1	...	...	...	1	...	1	...	...
<b>Local irrigation of abdomen</b>										
Intussusception . . . . .	2	...	...	...	1	1	...	...	...	...
Cholecystotomy . . . . .	...	1	1	...	...	...	...	...	...	...
Cholecystocolostomy . . . . .	...	1	...	...	...	...	...	1	...	...
Abscess of liver . . . . .	1	...	...	...	...	...	...	...	1	...
Gastrojejunostomy . . . . .	...	1	...	...	...	...	...	1	...	...
Abdominal abscess . . . . .	1	...	...	...	...	1	...	...	...	...
Splenectomy . . . . .	2	1	...	...	1	...	1	1	...	...
Loretto's operation . . . . .	1	...	...	...	...	...	1	...	...	...
For duodenal ulcer . . . . .	1	...	...	...	...	...	...	1	...	...
<b>Hæmorrhoids—</b>										
Whitehead . . . . .	14	6	...	...	1	2	5	9	2	1
Ligature and excision . . . . .	5	3	...	...	1	...	5	1	1	...



## Operations—continued.

Duration of residence after operation.										Result.				Remarks.
Dys.	Dys.	Wks.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12						
...	1	1	...	...	...	...	...	...	...	2	...	...	...	Multiple exogenous 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
2	...	2	...	...	...	...	...	...	...	...	...	...	4	
4	2	...	...	...	...	...	...	...	...	...	...	...	6	
1	4	14	3	...	...	...	...	...	...	19	...	...	3	
2	5	15	...	...	...	...	...	...	...	19	...	...	3	
...	...	2	1	...	...	...	...	...	...	3	...	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	
1	17	85	16	...	...	...	...	...	...	117	...	...	2	Peritonitis 2.
...	4	9	1	...	...	...	...	...	...	13	...	...	1	Fatal case: fatty heart.
1	3	1	...	...	...	...	...	...	...	3	...	...	2	Fatal case. See "Irreducible umbilical hernia."
...	...	...	1	...	...	...	...	...	...	...	1	...	...	Rectum and sigmoid, lateral with Murphy's button.
1	...	...	...	...	...	...	...	...	...	...	...	...	1	Ruptured small gut. See also "Colectomy." Fatal: septic peritonitis.
1	...	...	...	...	...	...	...	...	...	...	...	...	1	Ruptured small gut; longitudinal rent. Fatal: septic peritonitis.
2	...	6	1	...	...	...	...	...	...	7	...	...	2	Fatal case: acute septic peritonitis.
...	...	3	4	1	...	1	...	...	...	7	1	...	1	Recurrent abscess l. Cœliotomy. Abscess found on brim of pelvis; abdomen closed; spontaneous evacuation 1.
3	1	...	...	...	...	...	...	...	...	...	...	...	4	
...	...	...	1	...	...	...	...	...	...	...	1	...	...	
...	1	...	1	...	...	...	...	...	...	1	...	...	1	General peritonitis from umbilical sinus 1. Fatal case: general peritonitis (cause ?) 1.
...	...	1	...	1	...	...	...	...	...	...	1	...	1	Cause ? 2. Peritonitis in both.
1	...	...	1	...	...	...	...	...	...	...	...	...	1	Reduced. No cause found for death.
...	...	...	...	1	...	...	...	...	...	...	1	...	...	Murphy's button. Hepatic flexure.
...	...	1	...	...	...	...	...	...	...	...	...	...	1	Through pleura.
...	...	...	1	...	...	...	...	...	...	...	...	...	1	Carcinoma of pylorus.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Incision. Previous ruptured gut. See 'Lancet,' Nov., 1895.
...	...	1	...	2	...	...	...	...	...	3	...	...	...	Ruptured spleen. See 'Clin. Soc. Trans.,' 1895.
...	1	...	...	...	...	...	...	...	...	...	...	...	1	No peritonitis. See "Abstract."
1	...	...	...	...	...	...	...	...	...	...	...	...	1	General peritonitis.
...	7	12	1	...	...	...	...	...	...	19	1	...	...	
1	5	2	...	...	...	...	...	...	...	8	...	...	...	

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Sex.		Age.								
	M.	F.	5	10	20	30	40	50	60	+60	
DIGESTIVE SYSTEM—continued.											
Hæmorrhoids—continued.											
Clamp and cautery . . . . .	1	...	...	...	...	...	1	...	...	...	
Fistula in ano . . . . .	24	5	...	...	2	4	6	8	8	...	
Fissure in ano . . . . .	5	2	...	...	1	3	2	1	...	...	
Prolapse of rectum . . . . .	1	...	...	...	...	...	...	...	1	...	
Ulceration of rectum . . . . .	...	1	...	...	...	...	1	...	...	...	
Stricture of rectum, syphilitic . . . . .	...	4	...	...	...	3	1	...	...	...	
Fibrous stricture of rectum . . . . .	...	1	...	...	1	...	...	...	...	...	
Recto-vaginal fistula . . . . .	...	1	...	...	...	...	...	1	...	...	
Gastrostomy . . . . .	2	1	...	...	...	...	1	...	2	...	
Colotomy—											
Inguinal . . . . .	5	3	...	...	1	2	...	1	...	4	
Lumbar . . . . .	1	2	...	...	...	...	...	1	1	1	
Typhlotomy . . . . .	2	...	...	...	...	2	...	...	...	...	
Celiotomy . . . . .	4	11	...	...	2	5	3	1	3	1	
GENITO-URINARY SYSTEM—											
Circumcision . . . . .	12	...	4	1	2	1	1	1	1	1	
Paraphimosis, incision . . . . .	2	...	...	...	1	1	...	...	...	...	
Excision of warts . . . . .	...	3	...	...	3	...	...	...	...	...	
Suture of urethra . . . . .	7	...	...	3	3	...	1	...	...	...	
Excision of stricture . . . . .	2	...	...	...	1	...	...	1	...	...	
Plastic of urethra . . . . .	1	...	...	...	...	...	...	1	...	...	
Cock's puncture . . . . .	5	...	...	...	2	...	2	...	1	...	
External urethrotomy . . . . .	11	...	...	2	...	...	3	2	2	2	
Internal urethrotomy . . . . .	5	...	...	...	...	...	1	3	1	...	
Aspiration of bladder . . . . .	2	...	...	...	...	...	1	...	1	...	
Supra-pubic cystotomy . . . . .	12	1	...	...	...	1	2	2	1	7	
Prostatectomy . . . . .	1	...	...	...	1	...	...	...	...	...	

## Operations—continued.

Duration of residence after operation.									Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.	
...	1	...	...	...	...	...	...	...	1	...	...	...	
2	17	8	2	...	...	...	...	...	27	2	...	...	
2	5	...	...	...	...	...	...	...	6	1	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	Previous Whitehead.
...	...	1	...	...	...	...	...	...	...	1	...	...	Cautery. Tuberculosis?
1	1	...	1	1	...	...	...	...	...	4	...	...	Incision 1, dilatation 3, excision of organised syphilides 1.
1	...	...	...	...	...	...	...	...	...	1	...	...	Excision. Previous excision of rectum.
2	...	...	1	...	...	...	...	...	1	...	...	...	Suture.
...	...	...	...	1	...	...	...	...	...	1	...	2	Carcinoma of œsophagus; syphilitic contraction of pharynx. Through rectus 2.
...	1	4	3	...	...	...	...	...	...	6	...	2	Carcinoma of rectum in all.
1	...	1	1	...	...	...	...	...	...	2	...	1	Carcinoma of descending colon. Carcinoma of rectum; carcinoma of sigmoid 1.
...	...	...	...	...	...	...	...	...	...	...	...	...	Right 1, left 1, median 1.
...	1	...	...	...	1	...	...	...	...	1	...	1	Carcinoma of cæcum and splenic flexure.
6	...	4	4	1	...	...	...	...	4	3	2	6	Carcinoma of sigmoid 1, carcinoma of rectum and pylorus 1, suppurating ovarian and intra-peritoneal abscess 1. Intermural fibroid 1, supposed appendicitis 1, tumour not found 1, septic peritonitis after hernia 1, inflammatory tumour under liver 1, exploration of ureter 1, carcinoma of stomach 1, malignant of liver 1, abscess about gall-bladder 1, peritonitis (cause?) 1, ruptured liver 1, retro-peritoneal hæmorrhage 1.
3	6	2	1	...	...	...	...	...	12	...	...	...	
...	2	...	...	...	...	...	...	...	2	...	...	...	
...	...	1	2	...	...	...	...	...	3	...	...	...	
...	...	7	...	...	...	...	...	...	7	...	...	...	Ruptured urethra 1.
...	...	1	1	...	...	...	...	...	2	...	...	...	Traumatic 2.
...	...	...	1	...	...	...	...	...	...	1	...	...	
...	...	1	2	2	...	...	...	...	3	1	...	1	Fatal: suppurative nephritis.
1	1	2	4	1	2	...	...	...	6	3	...	2	Ruptured urethra 1. Partial rupture 1. Lardaceous disease 1.
...	3	2	...	...	...	...	...	...	5	...	...	...	
...	...	2	...	...	...	...	...	...	2	...	...	...	
1	3	...	4	3	1	1	...	...	3	5	...	5	Retention 3, enlarged prostate 6, extra-peritoneal rupture of bladder 1, carcinoma 1, tuberculous bladder 1, hæmaturia 1. Fatal: pneumonia 2, nephritis 1.
1	...	...	...	...	...	...	...	...	1	...	...	...	Partial; supra-pubic. See "Supra-pubic lithotomy."

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
<b>GENITO-URINARY SYSTEM—<i>continued.</i></b>										
Supra-pubic lithotomy . . . . .	3	...	1	...	1	...	...	...	...	1
Lithotrity . . . . .	4	...	...	2	1	...	...	...	1	...
Extraction of urethral calculus . . . . .	1	...	...	...	1	...	...	...	...	...
"    of vesical calculus . . . . .	...	1	...	...	...	1	...	...	...	...
Aspiration of kidney . . . . .	...	2	...	...	...	2	...	...	...	...
Nephrotomy . . . . .	3	2	...	...	...	2	1	2	...	...
Nephrectomy . . . . .	2	1	...	...	...	...	...	...	3	...
Nephrorrhaphy . . . . .	...	3	...	...	...	1	2	...	...	...
Nephrolithotomy . . . . .	...	5	...	...	1	1	...	1	2	...
Excision of hydrocele of cord . . . . .	5	...	1	...	3	...	...	1	...	...
Tapping of hydrocele . . . . .	2	...	1	...	...	...	...	...	...	1
Radical cure of hydrocele . . . . .	5	...	...	...	...	2	1	1	1	...
Excision of hydrocele of hernial sac . . . . .	1	...	...	...	1	...	...	...	...	...
"    of spermatocele . . . . .	1	...	...	...	1	...	...	...	...	...
For undescended testis . . . . .	13	...	...	1	12	...	...	...	...	...
Scraping epididymis . . . . .	2	...	...	...	1	1	...	...	...	...
Castration . . . . .	8	...	...	1	2	2	1	1	...	1
Excision of chronic interstitial mastitis . . . . .	...	1	...	...	...	...	...	1	...	...
"    of sinus of breast . . . . .	...	1	...	...	...	...	1	...	...	...
Pyosalpinx . . . . .	...	1	...	...	...	...	1	...	...	...
Scraping of gummatous abscess of breast . . . . .	...	2	...	...	2	...	...	...	...	...
Curetting of uterus . . . . .	...	1	...	...	...	...	...	1	...	...
Pelvic abscess . . . . .	...	3	...	...	2	...	1	...	...	...
Ruptured bladder . . . . .	...	1	...	...	...	...	1	...	...	...
"    perinæum . . . . .	...	1	...	...	...	...	1	...	...	...
Suture of recto-vaginal septum . . . . .	...	1	...	...	1	...	...	...	...	...
<b>OSSEOUS SYSTEM.</b>										
Trephining tibia . . . . .	1	2	...	...	2	...	...	1	...	...
Excision of carious rib . . . . .	4	...	...	1	1	1	...	...	1	...
Scraping for caries of—										
Malar bone . . . . .	1	...	...	1	...	...	...	...	...	...
Rib . . . . .	8	3	...	3	3	2	1	1	1	...
Pelvis . . . . .	6	1	1	2	2	1	...	1	...	...
Scapula . . . . .	1	1	0	1	1	...	...	...	...	...
Olecranon . . . . .	1	...	...	...	1	...	...	...	...	...
Femur . . . . .	3	1	...	1	3	...	...	...	...	...
Tibia . . . . .	3	1	1	...	3	...	...	...	...	...
Tarsus . . . . .	5	1	1	3	...	1	1	...	...	...
Metatarsus . . . . .	1	1	1	1	...	...	...	...	...	...
Removal of necrosed bone from—										
Frontal bone . . . . .	2	2	...	...	1	1	...	...	...	2
Superior maxilla . . . . .	...	1	1	...	...	...	...	...	...	...



## Operations—continued.

Duration of residence after operation.										Result.				Remarks.
Dys.	Dys.	Wks.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
1-3	5-13	2-4	1-2	2-4	4-6	6-8	9-12	+1						
...	1	1	1	...	...	...	...	...	...	2	1	...	...	Partial prostatectomy 1.
...	3	1	...	...	...	...	...	...	...	4	...	...	...	
1	...	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Through urethra.
...	1	1	...	...	...	...	...	...	...	1	1	...	...	Hydronephrosis. Same case.
1	...	3	1	...	...	...	...	...	...	2	2	...	1	Nephralgia 2, carcinoma 1.
...	...	...	3	...	...	...	...	...	...	3	...	...	...	Hydronephrosis 2, carcinoma 1.
...	1	...	2	...	...	...	...	...	...	3	...	...	...	
1	1	...	2	1	...	...	...	...	...	3	...	...	2	Fatal case: double pyonephrosis (2 operations).
1	1	3	...	...	...	...	...	...	...	5	...	...	...	
1	1	...	...	...	...	...	...	...	...	2	...	...	...	
...	1	4	...	...	...	...	...	...	...	5	...	...	...	Excision and drainage.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	2	10	1	...	...	...	...	...	...	12	1	...	...	Double 4. See also "Castration."
...	...	2	...	...	...	...	...	...	...	...	2	...	...	Tuberculous.
...	2	5	...	1	...	...	...	...	...	7	1	...	...	Enlarged prostate 1, undescended testis 2, tuberculous testis 4, gummatous 1. See also "Radical cure of hernia."
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	1	1	...	...	...	...	...	...	...	...	2	...	...	Same case.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	1	1	1	...	...	...	...	...	...	1	...	2	Same case. Cause? No P.M.
1	...	...	...	...	...	...	...	...	...	...	...	...	1	Suture. Fatal from peritonitis.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	1	1	1	...	...	...	...	...	...	2	1	...	...	Syphilitic periostitis 1, osteitis 1, erysipelas 1.
...	1	3	...	...	...	...	...	...	...	4	...	...	...	
...	1	...	...	...	...	...	...	...	...	...	1	...	...	
2	5	3	1	...	...	...	...	...	...	3	8	...	...	
...	5	2	...	...	...	...	...	...	...	7	...	...	...	
...	1	1	...	...	...	...	...	...	...	1	1	...	...	
...	...	1	...	...	...	...	...	...	...	...	1	...	...	
...	...	3	...	1	...	...	...	...	...	...	4	...	...	
...	1	1	2	...	...	...	...	...	...	1	3	...	...	
1	...	3	2	...	...	...	...	...	...	2	4	...	...	
...	1	1	...	...	...	...	...	...	...	...	2	...	...	
...	2	...	2	...	...	...	...	...	...	3	1	...	...	
...	...	1	...	...	...	...	...	...	...	...	1	...	...	

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Sex.		Age.								
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	
OSSEOUS SYSTEM—continued.											
Removal of necrosed bone from—											
Inferior maxilla . . . . .	3	4	3	...	...	2	...	1	1	...	
Acromion . . . . .	1	...	...	...	...	1	...	...	...	...	
Sternum . . . . .	...	1	...	...	...	...	...	...	1	...	
Pelvis . . . . .	3	...	...	...	3	...	...	...	...	...	
Humerus . . . . .	6	1	1	1	4	...	1	...	...	...	
Ulna . . . . .	2	1	...	...	1	...	...	...	...	2	
Radius . . . . .	3	2	1	...	4	...	...	...	...	...	
Femur . . . . .	10	5	...	...	7	4	3	1	...	...	
Tibiae . . . . .	6	3	...	1	7	1	...	...	...	...	
Tarsus . . . . .	2	...	1	...	1	...	...	...	...	...	
Metatarsus . . . . .	4	3	2	...	3	...	2	...	...	...	
Phalanges . . . . .	1	1	...	...	...	...	1	1	...	...	
Scraping of sinus of—											
Scalp . . . . .	1	...	...	...	...	...	...	1	...	...	
Hand . . . . .	1	...	1	...	...	...	...	...	...	...	
Axilla . . . . .	1	...	...	...	...	1	...	...	...	...	
Loin . . . . .	2	...	...	...	1	...	1	...	...	...	
Iliac region . . . . .	1	...	...	...	1	...	...	...	...	...	
Scrotum . . . . .	1	...	...	...	...	1	...	...	...	...	
Sacrum . . . . .	...	1	...	...	...	1	...	...	...	...	
Groin . . . . .	2	...	...	...	...	1	...	...	1	...	
Hip and thigh . . . . .	12	...	...	5	3	1	2	1	...	...	
Knee . . . . .	1	3	...	...	4	...	...	...	...	...	
Leg . . . . .	2	...	...	...	2	...	...	...	...	...	
Ankle . . . . .	2	...	...	...	1	...	1	...	...	...	
Foot . . . . .	1	...	...	...	...	...	1	...	...	...	
ARTICULAR SYSTEM.											
Excision of—											
Shoulder . . . . .	...	1	...	...	...	...	...	...	1	...	
Elbow . . . . .	1	1	...	...	...	2	...	...	...	...	
Wrist . . . . .	5	...	...	...	...	1	3	1	...	...	
Hip . . . . .	5	1	...	2	3	...	1	...	...	...	
Knee . . . . .	6	5	1	3	3	1	2	1	...	...	
„ V-shaped . . . . .	3	1	...	...	3	...	1	...	...	...	
Ankle . . . . .	1	1	1	...	...	1	...	...	...	...	
Interphalangeal joints . . . . .	14	5	...	...	8	10	...	1	...	...	
Metatarso-phalangeal joint . . . . .	2	1	...	...	1	...	2	...	...	...	
Arthrectomy of—											
Wrist . . . . .	...	2	...	...	...	2	...	...	...	...	
Elbow . . . . .	5	...	...	...	3	2	...	...	...	...	

*Operations*—continued.

Duration of residence after operation.										Result.				Remarks.
Dys.	Dys.	Wks.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12						
1	3	1	2	...	...	...	...	...	...	4	3	...	...	
...	...	1	1	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	1	1	1	...	...	...	...	...	...	...	3	...	...	
1	1	4	1	...	...	...	...	...	...	4	3	...	...	Double 1.
1	...	...	1	1	...	...	...	...	...	1	2	...	...	
...	1	2	2	...	...	...	...	...	...	2	3	...	...	
...	3	3	6	3	...	...	...	...	...	5	10	...	...	Erysipelas 1.
...	3	4	2	...	...	...	...	...	...	6	2	...	1	Pyæmia 1.
...	1	...	1	...	...	...	...	...	...	...	2	...	...	
...	1	5	1	...	...	...	...	...	...	3	4	...	...	Double 1.
1	...	1	...	...	...	...	...	...	...	2	...	...	...	
1	...	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	...	...	1	...	...	
...	1	...	...	...	...	...	...	...	...	...	1	...	...	
1	...	1	...	...	...	...	...	...	...	1	1	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	1	1	...	...	...	...	...	...	...	1	1	...	...	
...	1	3	3	2	2	...	1	...	...	4	8	...	...	
...	1	...	2	1	...	...	...	...	...	1	3	...	...	
...	1	1	...	...	...	...	...	...	...	1	1	...	...	
...	1	1	...	...	...	...	...	...	...	...	1	1	...	Post-operative mania 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	...	...	1	...	...	Old dislocation with pressure on nerves.
...	...	1	1	...	...	...	...	...	...	1	1	...	...	Tuberculosis 2.
...	1	3	1	...	...	...	...	...	...	...	4	...	1	Tubercle 3, traumatic ankylosis 1. Fatal: phthisis. Langenbeck in all.
...	...	1	2	2	1	...	...	...	...	1	5	...	...	Posterior incision 1, acute arthritis 1.
1	...	2	5	3	...	...	...	...	...	7	3	...	1	Transpatelloid 6, patella removed 1, for infantile paralysis 1. Fatal: Addison's disease.
...	...	2	1	1	...	...	...	...	...	3	1	...	...	Ankylosis in all.
...	...	...	2	...	...	...	...	...	...	1	1	...	...	Anterior incision 2.
...	8	9	2	...	...	...	...	...	...	17	2	...	...	Hammer-toe 14.
...	...	1	1	1	...	...	...	...	...	3	...	...	...	Ankylosis 1, hallux valgus 1.
...	2	...	...	...	...	...	...	...	...	...	2	...	...	Multiple incisions 2.
1	3	1	...	...	...	...	...	...	...	1	4	...	...	Tubercle in all; multiple incisions in all. Re-arthroctomy 2.

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Sex		Age.								
	M.	F.	5	10	20	30	40	50	60	70	
ARTICULAR SYSTEM—continued.											
Arthrectomy of—											
Hip . . . . .	5	6	1	...	6	4	...	...	...	...	...
Knee . . . . .	1	2	3	...	2	...	...	1	...	...	...
Ankle . . . . .	5	3	2	4	1	...	1	...	...	...	...
Arthrotomy of—											
Hip . . . . .	12	1	2	6	3	1	1	...	...	...	...
Knee . . . . .	1	3	...	2	...	...	1	1	...	...	...
Loose body in knee . . . . .	4	...	...	...	...	2	1	1	...	...	...
Aspiration of knee . . . . .	1	2	...	...	...	1	1	1	...	...	...
Forcible movements of joints . . . . .	4	...	...	...	1	2	1	...	...	...	...
Amputation for disease of—											
Arm . . . . .	1	1	...	...	...	...	...	2	...	...	...
Forearm . . . . .	2	...	...	...	...	...	...	1	1	...	...
Fingers . . . . .	2	5	...	...	...	3	1	1	2	...	...
Thigh . . . . .	7	2	1	1	1	1	...	4	1	...	...
Leg . . . . .	3	5	1	...	3	...	...	1	1	2	...
Toes . . . . .	8	4	...	1	9	1	1	...	...	...	...
Primary amputation of—											
Shoulder . . . . .	1	...	...	1	...	...	...	...	...	...	...
Fingers . . . . .	3	...	...	...	1	2	...	...	...	...	...
Phalanges . . . . .	...	1	...	...	...	...	...	1	...	...	...
Leg . . . . .	1	2	1	...	...	...	...	1	1	...	...
Secondary amputation of—											
Thigh . . . . .	2	...	...	1	1	...	...	...	...	...	...
Leg . . . . .	1	...	...	...	...	...	...	...	1	...	...
Suture of tendons . . . . .	6	3	...	1	3	3	2	...	...	...	...
Reduction of dislocations of—											
Shoulder . . . . .	4	...	...	...	...	...	...	...	3	1	...
Radius . . . . .	1	...	...	...	1	...	...	...	...	...	...
Hip . . . . .	1	1	1	1	...	...	...	...	...	...	...
Wiring of fractures—											
Inferior maxilla . . . . .	1	...	...	...	...	...	...	...	1	...	...
Radius and ulna . . . . .	1	...	...	...	...	...	...	...	...	1	...
Humerus . . . . .	1	...	...	...	...	1	...	...	...	...	...
Tibia . . . . .	2	...	...	...	...	...	1	1	...	...	...
Patella . . . . .	12	5	...	...	...	6	7	3	1	...	...
Olecranon . . . . .	2	...	...	...	...	1	1	...	...	...	...
Pinning patella . . . . .	1	...	...	...	...	...	...	1	...	...	...
Re-fracture for vicious union . . . . .	1	...	...	...	1	...	...	...	...	...	...
Wrenching of ankle . . . . .	1	...	...	...	...	...	...	1	...	...	...
Excision of bursa and ganglion . . . . .	4	11	...	...	3	6	4	...	2	...	...



*Operations—continued.*

Duration of residence after operation										Result				Remarks
Dys.	Dys.	Wks	Mts	Mts	Mts	Mts	Mts	Mts	Mts	C	R	U.	D.	
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	12-15	15-18					
...		1	6	3	1	...	...	...	...	1	7	2	1	Acute arthritis 1. Fatal: lardaceous disease.
...	2	2	1	1	...	...	...	...	...	1	4	1	...	Subsequent amputation 1.
1	1	2	4	...	...	...	...	...	...	2	6	...	...	Anterior incision 2.
...	2	1	2	4	1	...	2	1	...	6	7	...	...	Acute arthritis 1, posterior incision 1.
1	1	...	2	...	...	...	...	...	...	2	1	...	1	Septic arthritis 1, fractured patella 1.
...	1	2	1	...	...	...	...	...	...	4	...	...	...	Extraction by arthrotomy.
...	1	1	1	...	...	...	...	...	...	3	...	...	...	
1	1	...	1	...	1	...	...	...	...	2	1	1	...	Elbow 1, knee 1, ankle 1.
1	...	1	...	...	...	...	...	...	...	...	...	...	2	Fatal: septic traumatic gangrene 1. Pneumonia 1.
...	...	1	1	...	...	...	...	...	...	1	...	...	1	Fatal: phthisis.
...	7	...	...	...	...	...	...	...	...	6	...	...	1	Renal disease 1.
...	...	7	2	...	...	...	...	...	...	8	1	...	...	Carden's 1, Gritti 1; lower third 6. Re-amputation 2.
...	...	3	3	1	1	...	...	...	...	7	1	...	...	Upper third 2, middle third 1, lower third 3; Syme 1, Pirogoff 1.
...	2	3	...	...	...	...	...	...	...	12	...	...	...	Hammer-toe 9.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	
1	2	...	...	...	...	...	...	...	...	3	...	...	...	
1	...	...	...	...	...	...	...	...	...	1	...	...	...	
2	...	1	...	...	...	...	...	...	...	1	...	...	2	Lower third 1, upper third 2.
1	...	...	1	...	...	...	...	...	...	1	...	...	1	Upper third 1, lower third 1.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Upper third 1.
1	7	...	1	...	...	...	...	...	...	8	1	...	...	
3	...	...	1	...	...	...	...	...	...	4	...	...	...	Subcoracoid in all.
1	...	...	...	...	...	...	...	...	...	...	1	...	...	Forwards.
1	...	1	...	...	...	...	...	...	...	2	...	...	...	Dorsal 2.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	...	1	...	...	...	...	...	...	...	1	...	Ununited fracture.
...	...	...	...	1	...	...	...	...	...	...	...	1	...	Ununited fracture.
...	...	...	...	2	...	...	...	...	...	2	...	...	...	Compound fracture.
...	1	8	7	1	...	...	...	...	...	15	2	...	...	Open method in all. Re-wiring 1. Tubercle cut of 1 pegged high up; extensor tendon divided 1. Suppurated 1.
1	1	...	...	...	...	...	...	...	...	2	...	...	...	Simple fractures.
...	...	...	...	1	...	...	...	...	...	...	1	...	...	Suppurated.
1	...	...	...	...	...	...	...	...	...	1	...	...	...	Femur.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Deformity after Pott's fracture.
4	10	1	...	...	...	...	...	...	...	15	...	...	...	Tuberculous 3.

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
<b>ARTICULAR SYSTEM—continued.</b>										
Scraping of teno-synovitis . . . . .	2	...	...	...	...	2	...	...	...	...
<b>AUDITORY SYSTEM.</b>										
Incision of membrane . . . . .	2	2	...	...	2	...	2	...	...	...
Removal of aural polypi . . . . .	...	1	...	1	...	...	...	...	...	...
„ of bone from mastoid . . . . .	15	23	11	7	12	4	3	...	1	...
Trephining over temporo-sphenoidal lobe . . . . .	...	1	...	...	...	1	...	...	...	...
„ „ cerebellum . . . . .	1	...	...	1	...	...	...	...	...	...
Exploration of cerebellum . . . . .	1	...	...	1	...	...	...	...	...	...
<b>DEFORMITIES.</b>										
Osteotomy of femur, subtrochanteric . . . . .	4	4	...	1	6	1	...	...	...	...
„ „ Macewen's . . . . .	24	4	...	8	19	1	...	...	...	...
„ of tibia . . . . .	...	3	...	2	1	...	...	...	...	...
„ „ and fibula . . . . .	6	5	...	10	1	...	...	...	...	...
Osteoclasis . . . . .	1	2	...	3	...	...	...	...	...	...
Osteotomy of fibula . . . . .	1	...	...	...	1	...	...	...	...	...
Tenotomy for talipes . . . . .	11	22	7	5	21	...	...	...	...	...
Phelps' . . . . .	6	2	4	3	1	...	...	...	...	...
Tarsectomy . . . . .	2	...	...	1	1	...	...	...	...	...
Tenotomy for pes planus . . . . .	1	...	...	...	1	...	...	...	...	...
„ for cicatricial contraction . . . . .	2	...	...	...	...	1	...	1	...	...
„ for Dupuytren's contraction . . . . .	1	...	...	...	...	...	...	...	...	1
„ for sterno-mastoid contraction . . . . .	1	...	...	1	...	...	...	...	...	...
Plastic operations . . . . .	6	5	2	3	2	2	...	1	1	...
Resection and suture of tendons . . . . .	1	...	...	...	...	...	1	...	...	...
Freeing of tendons . . . . .	...	1	...	...	1	...	...	...	...	...
For dislocation of peronei tendons . . . . .	1	...	...	...	...	1	...	...	...	...
For deflected septum nasi . . . . .	1	...	...	...	1	...	...	...	...	...
Screwing of joints . . . . .	2	...	...	1	1	...	...	...	...	...
Avulsion of toe-nail . . . . .	2	...	...	...	...	2	...	...	...	...
<b>MALFORMATIONS.</b>										
Single harelip . . . . .	4	4	7	...	1	...	...	...	...	...
Double harelip . . . . .	2	...	2	...	...	...	...	...	...	...
Cleft palate . . . . .	5	5	4	2	2	2	...	...	...	...
Injection of spina bifida . . . . .	1	...	...	1	...	...	...	...	...	...
Excision of transverse process . . . . .	1	...	...	1	...	...	...	...	...	...
Epispadias . . . . .	...	2	...	...	...	2	...	...	...	...

*Operations—continued.*

Duration of residence after operation.										Result.				Remarks.
Dys.	Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12						
...	...	1	1	...	...	...	...	...	...	2	...	...	...	Tuberculous.
...	...	1	3	...	...	...	...	...	...	1	3	...	...	Erysipelas 1, double 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
2	10	14	11	1	...	...	...	...	...	9	25	...	4	Cerebellar abscess 1, meningitis 2, gangrene of lung 1, erysipelas 1.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Extra-dural abscess.
...	...	1	...	...	...	...	...	...	...	...	...	...	1	Abscess found 1; fatal from secondary abscess.
...	...	1	...	...	...	...	...	...	...	...	...	...	1	Same case as last; secondary abscess not found.
...	...	1	6	1	...	...	...	...	...	7	...	...	1	Fatal case: amyloid disease from suppuration.
...	...	2	18	6	2	...	...	...	...	28	...	...	...	Ankylosis of knee 4, genu varum 1, genu valgum 21, rachitis 2.
...	...	...	2	1	...	...	...	...	...	3	...	...	...	Unequal growth at epiphysis 1.
...	...	...	7	3	1	...	...	...	...	11	...	...	...	Genu valgum 7, bowed tibia 2, femora also 7. V-shaped 2.
...	...	...	2	1	...	...	...	...	...	3	...	...	...	Genu valgum 2, femur 1, tibia 1.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	For deformity after Pott's fracture.
14	6	6	5	2	...	...	...	...	...	14	17	2	...	Talipes equino-varus 15, talipes equinus 18.
...	...	2	2	2	1	1	...	...	...	6	2	...	...	Double 2, varus 1; remainder talipes equino-varus.
...	1	...	1	...	...	...	...	...	...	1	1	...	...	Talipes equino-varus 2.
...	1	...	...	...	...	...	...	...	...	...	1	...	...	Peronei.
1	...	1	...	...	...	...	...	...	...	1	1	...	...	...
...	...	1	...	...	...	...	...	...	...	1	...	...	...	...
...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
...	2	3	5	1	...	...	...	...	...	5	6	...	...	Arm 3, fingers 4, hand 1, face 1, old empyema 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Finger 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Finger 1.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Periosteal flaps.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Excision of deflected portion.
...	...	...	2	...	...	...	...	...	...	...	2	...	...	Infantile paralysis 1, knee 1.
1	1	...	...	...	...	...	...	...	...	1	1	...	...	Ingrowing toe-nail.
...	3	5	...	...	...	...	...	...	...	6	...	1	1	Fatal case: diarrhoea.
...	2	...	...	...	...	...	...	...	...	1	...	...	1	Fatal: broncho-pneumonia.
...	1	6	3	...	...	...	...	...	...	4	4	2	...	...
...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
...	1	...	...	...	...	...	...	...	...	...	1	...	...	Congenital curvature of spine?
...	1	1	...	...	...	...	...	...	...	...	1	1	...	...





## Operations—continued.

Duration of residence after operation.									Result.				Remarks.
Dys.	Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12					
...	...	...	1	...	...	...	...	...	...	1	...	...	Acetabulum made; suppurated.
...	1	...	...	...	...	...	...	...	...	1	...	...	
...	2	...	...	...	...	...	...	...	2	...	...	...	Punctured wound. See also "Auditory system." Sclerosis from an injury 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	
1	...	2	1	...	...	...	...	...	3	...	...	1	Bullet wound 1. Fatal case: chronic renal.
...	1	6	5	2	...	...	...	...	1	13	...	...	
...	2	2	5	3	...	...	1	...	...	11	...	2	Fatal: acute phthisis and lardaceous disease.
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	6	2	3	...	...	...	...	...	8	3	...	...	
2	7	3	1	...	...	...	...	...	...	13	...	...	
1	3	2	1	...	...	...	...	...	6	1	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	From medio-tarsal joint.
1	...	...	...	...	...	...	...	...	1	...	...	...	From shoulder.
...	1	1	...	...	...	...	...	...	2	...	...	...	Cheek 1, hand 1.
...	...	1	...	...	...	...	...	...	...	1	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	
...	11	11	6	1	...	1	...	...	25	5	...	...	Cicatricial contraction 7, ulcers 14, lupus 7, webbed fingers 1.
...	...	...	...	1	...	...	...	...	1	...	...	...	Phelps.
...	1	...	...	...	...	...	...	...	...	1	...	...	
3	...	...	1	...	...	...	...	...	3	1	...	...	
...	2	...	...	...	...	...	...	...	2	...	...	...	
									1219	354	29	116	
									1718				

## SUMMARY OF DISEASES.

### GENERAL DISEASES.

#### ERYSIPELAS (admitted with the disease).

Males 48, females 43. C. 82, R. 4, D. 5.

*Situation.*—Trunk 1; trunk and upper extremity 1; trunk and lower extremity 1; scrotum and buttocks 2; mamma 1; neck and thorax 1; upper extremity 9; lower extremity 20; face 55; cellular cutaneous in 2.

*Causation.*—Wounds 25; vaccination 3; ulcers 7; abrasions 9; sinus 1; boil 1; abscess 1; cause unknown 44.

*Treatment.*—Incisions 7; tepid sponging 1; skin grafting 1 (cellular cutaneous); hot lotions in all.

#### *Fatal cases.*

1. J. J—, male, æt. 34. Facial erysipelas, started from cut forehead. Admitted delirious. Violent delirium. Temp. rose to 110° F. just before death, which occurred within 24 hours. P.M.—Œdema of lungs.

2. J. G—, male, æt. 17 months. Erysipelas of body that gradually spread to buttock and lower extremities. Arose from wound for excision of nevus. Death on 4th day. P.M.—Six ounces of sero-pus in right pleura. Right lung somewhat carnified.

3. S. H—, male, æt. 44. Erysipelas of face. Cause unknown. High temperatures. Death on 6th day. P.M.—Lungs and kidneys engorged with blood. Brain unduly firm, possibly caused by alcohol.

4. G. E—, male, æt. 60. Cellular cutaneous erysipelas of arm. Cause unknown. Two days' duration. Admitted delirious. Multiple incision. Death in 24 hours. No P.M.

5. W. F—, male, æt. 5 months. Vaccination 5 weeks previously. Erysipelas from vaccination marks 2 weeks previously. Arm, forearm, and hand affected on admission. Rash spread to trunk. Sudden death on 7th day. P.M.—Heart pale in colour, also kidneys. Organs healthy otherwise.

*Congenital syphilis.**Fatal cases.*

1. A. E. P—, female, æt. 10 months. Third child in family of 3. Eldest child healthy, second suffered from similar disease to the patient. Admitted, numerous sloughy ulcers on trunk and legs. Child well nourished. Diarrhoea set in and continued in spite of treatment. Death on 15th day. P.M.—Nothing found to point to causation of disease. Organs normal.

2. R. F. B. S—, male, æt. 5 weeks (B. P.). Child born healthy, but after a week began to show signs of illness, and developed abscesses over face and legs. No other children in family. Father said to suffer from sore throat. Child weighed only 6½ lbs. Face wizened and shrivelled. Abdomen distended and covered with erythematous rash. Leg wasted, skin reddish in colour, and contained numerous nodules which vary in consistence, but are moveable and deep structures; when opened discharged pus. Similar swelling on back of head. No snuffles. Hyd. c. cretâ given and mercury inuncted. Child sank, and died of asthenia on 9th day. P.M.—No evidences of pyæmia or syphilis. Abscesses might have been tuberculous. Lungs extensively collapsed. Other organs healthy.

*Anthrax pustule.*—J. F—, female, æt. 26.

Four days before admission noticed small papule on chin, which became painful on the following day. Two days before admission lip became painful, while on the next day the glands over internal carotid became enlarged. On admission, a small crater surrounded by a black slough, ½ inch in diameter, which was, in its turn, surrounded by vesicles. Sero-purulent discharge from central crater. Anthrax bacilli were found in fluid contained in a vesicle. Excision on same day as admission. Glands disappeared on 4th day after admission. No rise of temperature. No constitutional disturbance. Subsequent plastic. Discharged on 44th day. No definite cause found for infection. Patient lived in a neighbourhood near which was a herd of cattle infected with anthrax. It is possible that an insect caused the infection.

*Carcinomata. Spheroidal.*

*Breast.*—Females 44. C. 34, U. 8, D. 2. Supra-clavicular glands affected in 1 case. Average duration 60 weeks, extremes 3 weeks and 5 years. Married 31, of whom 14 had borne children, and 1 had had 2 miscarriages. History of cancer in 9, tubercle in 6, abscess in 3, trauma in 5. Atrophic 1, encephaloid 1, fibro-adenoma in opposite breast 1.

*Treatment.*—Amputation of breast with clearance of axilla in 33; amputation alone in one very early case; operation not advised in 3; treatment refused in 4; antitoxin tried in 1 case, whose age was 78, but abandoned because of symptoms produced.

*Complications.*—Chronic eczema of nipple in 2; skin involved in 22; ulcerated in 3; fibroma of uterus 1.

*Fatal cases.*—Æt. 39 and 50 respectively. Infected with erysipelas at time of operation. See Special Table III.

*Recurrent in breast.*—Females 7. C. 5, R. 1, U. 1. Interval since primary operation: 3 weeks 1, 5 months 1, 6 months 2, 9 months 1, 15 months 1, 18 months 1. Recurrence in glands of axilla 3 months previously 1.

*Treatment*.—Excision in 6 cases. Treatment by Coley's toxine in 2; severe rigors in 1 and abscess in another, but no material improvement. Growth was large and ulcerated. Edema of arm. Left at own request.

*Kidney*.—M. A. B—, female, æt. 51. Tumour appeared 6 years ago, when it was the size of an egg, since when it has gradually increased. Left side of abdomen occupied by a rounded irregular swelling, reaching laterally from umbilicus to loin and from costal margin to iliac crest. Pelvis free. Consistence firm. Percussion gives dulness over tumour. Urine acid, trace of albumen. No blood. 5th day, cœliotomy through linea semilunaris. Posterior parietal peritoneum over tumour and outside colon incised. Kidney ablated. Shelled out. Many large vessels divided. Vessels and ureter tied in one ligature. Peritoneum stitched. Tumour was lobulated and cystic, sprang from the upper part of kidney, which was only represented by its lower portion (less than half), that projected from the tumour, of which it formed but a small part. Specimen preserved in museum. Progress good except for some suppuration in wound, and an attack of bronchitis. Discharged on 53rd day.

*Fatal case*.—T. E—, male, æt. 27. Twenty-seven months previously attack of scalding on micturition. Six weeks later an attack of pain passing from the kidney into penis and testis, followed by hæmaturia lasting 2 to 3 days. During next 8 months two similar attacks, but not so violent. Then a fourth attack, as severe as the first, which lasted 4 hours, and was followed by hæmaturia. Six months before admission had several severe attacks, while 1 month before admission patient was again laid up with a like affection, and hæmaturia supervened for 14 days. On admission nothing to be felt in right lumbar region, but pressure gave rise to pain. Urine normal. Renal colic followed by albumen in urine and few red blood-discs under the microscope. Eighteenth day, lumbar exploration of kidney. Kidney brought to surface. Incision along convex border. No stone found, but some thickening was felt and incised, while at the upper part of the region a portion of kidney substance was seen to look abnormal. Wound plugged. Temperature rose after operation until it reached 108·2° before death. Blood in urine continually. Much blood effused round kidney. Many clots removed and wound plugged again. Death on 3rd day after operation. P.M.—Right kidney normal in shape and size, presented two abnormal areas, one situated near convex border suggested, by its different colour and consistence, a neoplasm, and was the size of a Barcelona nut, and presented no capsule. Surface presented numerous yellow spots. The second tumour was quite independent of the first, and was of same size, shape, and consistence, and differed only in the fact that the yellow dots were not so apparent. Left kidney was normal with one exception. In cortex was an irregular smooth-walled cavity, the size of a bean, and filled with fluid that was proved, by microscope, to be pus. Remaining organs healthy. Enormous extravasation of blood about the right kidney. Microscopic examination of growth proved it to be a spheroidal-celled carcinoma.

#### *Carcinoma (columnar).*

*Carcinoma of pylorus*.—*Gastro-jejunostomy*.—E. R—, female, æt. 43. No history of carcinoma. Eight months previously, while in the 7th month of her pregnancy, patient was attacked with persistent vomiting, occurring  $\frac{1}{4}$  hour after



meals. Has lost flesh rapidly last few months. When admitted into Medical ward, stomach was distended. Near the umbilicus a hard nodular growth was found that shifted its position, being sometimes found in the right hypochondrium. Remained in hospital 14 days, during which time there was but little vomiting. About 2 weeks after leaving hospital vomiting recurred, as did also the pain, and patient was readmitted to Hospital ward on 57th day after admission to Medical ward. Abdomen distended but flaccid. Hard nodular growth felt just to right of umbilicus, which moved on respiration. 58th day stomach washed out. Abdomen opened through median incision terminating just below umbilicus. Growth of pylorus found that infiltrated stomach, rendering radical measures impossible. Gastro-jejunostomy by Senn's plates and a few Lembert's sutures. Abdominal wound closed. Rectal feeding for 24 hours, then rectal feeding supplemented by small quantities of barley water. On the 2nd day after operation milk peptonised was given, and soon followed by Valentine's meat juice; while on 21st day after operation solid food was given. Small doses of morphia were given for few days following operation. After shock was got over the patient progressed fairly well, though troubled sometimes by diarrhoea and at other times by constipation. She did not seem to gain flesh in proportion to the amount of food taken. On 47th day after operation patient was allowed up on sofa, but was attacked by vomiting; she became collapsed and was put back to bed. She rallied on following day, but was again attacked with vomiting and became unconscious. Left pupil dilated. Right extremities became rigid, and finally all limbs, while Cheyne-Stokes' respiration supervened, and death followed on 49th day after operation. P.M.—Body extremely emaciated. Abdominal wound firm. Stomach lay considerably to the left and much distended, its lower border reaching to the umbilicus; contents consisting of  $1\frac{1}{2}$  pints of blood-stained fluid. Carcinomatous stricture of pylorus, scarcely admitting an ordinary quill. Growth hard, and ceased abruptly at commencement of duodenum. No ulceration. First and second part of duodenum much distended and filled with bile-stained contents. Jejunum formed a complete loop, and the opening into stomach was 17 inches from pylorus. Union perfect. Opening in stomach lay 3 inches from pylorus and 1 inch from inferior border. Remains of Senn's plates and silk ligatures still present. Opening between stomach and intestine was large enough to admit little finger. Carcinomatous gland behind pylorus. No secondary growths. Kidneys presented early interstitial change. Large hæmorrhage on surface of left vertex of brain, and had ruptured pia and arachnoid, and lay beneath dura. The cause of the hæmorrhage was the vessels of the pia and arachnoid membranes. Hemisphere markedly compressed. A little fluid blood was found at base of brain.

*Carcinoma of transverse colon.*—E. C—, female, æt. 50. Pain, diarrhoea, and constipation 5 years previously. Right lumbar colotomy for intestinal obstruction 18 months previously. Progress good. No emaciation. Some discharge of offensive matter from anus for some time. On admission, body well nourished. Hard moveable mass in left iliac region. Pelvis free. Celiotomy. Mass adherent to anterior abdominal wall, and found to be carcinoma of transverse colon with a knuckle of small gut infiltrated and adherent. Double resection of gut. Eight inches of large gut removed. Double end to end anastomosis by Czerny-Lembert continuous suture. Large intestine suture kept outside

abdomen by glass rod. Temperature dropped after operation, but quickly rose and reached 103° F. just before death in 24 hours after operation. P.M.—Recent localised peritonitis about small gut suture, which held perfectly and was situated 10½ feet from pylorus. One stitch in large intestinal suture had given way, but this was outside abdomen. Early interstitial change in kidneys. Obsolete and miliary tubercle in lungs. No secondary growths. Growth on large intestine had not obstructed lumen, but the wall of gut was converted into a cancerous mass with an ulcerating surface towards the lumen of the gut.

*Carcinoma of sigmoid flexure.*—E. S—, female, æt. 58. Admitted complaining of 8 days' constipation, vomiting, and pain in abdomen. Median cœliotomy. Carcinomatous stricture of large bowel. Paul's tube inserted into distended gut. Abdomen closed. Coma supervened, and patient died in 18 hours from admission. P.M.—Paul's tube 18 inches from anus. Atrophic carcinoma of large gut 13 inches from anus. Lumen of bowel reduced to size of finger tip. Growth formed flattened low projection, with some ulceration of surface. Section showed bands of white fibrous tissue. Small gland in mesocolon.

*Rectum.*—Males 16, females 8. C. 5, R. 7, U. 7, D. 5. One case of duration over 1 year, namely, of 14 months.

*Situation.*—Reaching down to within ½" of anus, 1; 1½", 2; 2", 5; 2½", 1; 3", 5; 4", 2; 5", 2 cases. Reaching anus 1 case; to internal sphincter 1. Glycosuria 1; glycosuria for some days after operation 1; intestinal obstruction 1.

*Treatment.*—Excision of growth in 7 cases; peritoneum opened in 3; left inguinal colotomy 8; gut divided in 5; Paul's tube inserted laterally in 1; lateral opening into colon 1; operation not advised in 7; left lumbar colotomy 1; cœliotomy 1.

#### *Fatal cases.*

1. F. J—, female, æt. 75. Eight months' difficulty with bowels. Bowels only open by enemata 6 weeks. Vomiting few days before admission. Inguinal colotomy. Paul's tube introduced laterally, permitting discharge of fæces. Gradual emaciation, and death on 15th day.

2. E. L—, female, æt. 46. Passage of blood, six weeks. No pain. Flat, moveable, slightly raised growth on anterior rectal wall. Anus slit back to coccyx. Ring of healthy mucous membrane left. Growth excised. Peritoneum opened. Suture of mucous above to that below. Temperature rose after operation to 103° F., and vomiting occurred just before death on the 5th day after operation. P.M.—General septic peritonitis.

3. H. R—, female, æt. 60. History of cancer in family. Present illness commenced 1 month ago, with pain in abdomen and constipation, and one attack of vomiting. Fæces passed the diameter of a pencil, but no actual obstruction had occurred. Great quantity of mucus from bowel. Stricture at about 2 inches from anus; finger could enter, but not reach beyond. No ulceration. Great fixation. Fluid in abdomen; emaciation. Attempted inguinal colotomy; bowel found shrunken and involved; stomach bulged into wound. Cœliotomy; all great intestine more or less involved; stricture of pylorus found. Operation abandoned. Death in a few hours. P.M.—Growth extended almost up to sigmoid flexure, and reduced lumen of bowel to size of probe. Glands in mesentery. Stricture of pylorus due to carcinoma also almost impervious, ended abruptly in

duodenum. Pylorus adherent to the infiltrating hepatic flexure of colon. Stomach dilated, measured 14 by 9 inches. Coats normal thickness. Yellow mass, continuous with top of both kidneys, appeared like lymph. Adrenals normal.

4. C. II—, female, æt. 47. Illness commenced 9 months ago with diarrhoea and tenesmus. Occasional attacks of colicky pain. Ulcerating growth found in rectum extending down to anus, and extending up further than the finger could reach. Mass adherent to sacrum. 3rd day, inguinal colotomy. Sigmoid flexure pulled out of wound, retained by glass rod through mesentery. 6th day.—Gut opened without anæsthetic; no pain. Bowels never acted well, and patient became weaker and weaker, and died on 42nd day. P.M.—Growth completely surrounded bowel for space of 4 inches from anus; surface ulcerated and sloughing. Coil of large bowel adherent to back of uterus, as was also a knuckle of small gut in lowest part of ileum. This latter was kinked, but not infiltrated. No secondary deposits. Other organs healthy, except for some thickening of aortic and mitral valves.

5. T. II—, male, æt. 66. Syphilis when young. No history of cancer. Pain on defæcation 3 months, worse last 14 days. Lost flesh. Flat circular growth  $1\frac{1}{2}$  inches in diameter, situated on anterior wall. Growth but little moveable. Trace of albumen in urine. 16th day, excision of growth. Curved incision from 3rd sacral vertebræ down left side of sacrum for 3 inches. From top of this a transverse incision across sacrum, flap reflected, sacrum divided below fourth sacral foramina and turned to the right. Peritoneum opened, and rectum separated easily from bladder. Growth removed with whole circumference of bowel for space of  $1\frac{1}{2}$  inches. Two ends of gut united with Lembert's sutures. Some glands also removed. Growth presented ulcer on centre with excised margins. On section growth was found to be necrotic in several small areas, surrounded by fibrous septa. Skin closed after reposition of sacrum to coccyx. Later wound broke down, and fæces came through. Patient died on 23rd day from asthenia. No P.M.

*Epithelioma of lip.*—Males 4, females 1. C. 5. Excision in all. Upper lip affected in female. Glands in 3.

*Recurrent epithelioma of lip.*—Males 2, female 1. C. 1. Duration, males 4 years, 15 months; females, 6 years. Recurrence interval: males, 15 months, 13 months; females, 2 years. Second recurrence 1. Excision of growth and glands with removal of portion of gum in wall. Excision of plastic in female.

*Epithelioma of chin.*—Males 1, females 1. C. 2.

M. S—, female, æt. 60. Small, irritable pimple appeared 6 years previously, which ulcerated and gradually spread to present dimensions of a crown piece. No glands. Excision of plastic. Microscopically squamous-celled carcinoma.

W. J—, male, æt. 46. Small pimple appeared 28 years ago, that gradually enlarged to size of hen's egg. 11 months previously burst and discharged watery fluid, after which it rapidly enlarged and fungated. On admission it presented a large red raw surface, with everted margins, reaching from thyroid cartilage almost to lip, exposing the inferior maxilla in the centre, which it had involved. Excision with portion of jaw. Skin edges united by plastic glands excised but not involved. Progress good. Microscopically, squamous-celled carcinoma.



*Tongue.*—Males 18, females 2. C. 13, R. 2, U. 1, D. 4. History of syphilis 6; chronic superficial glossitis 5; glands enlarged 11; jaw involved 2; floor of mouth 1; epiglottis 1; fauces 2.

*Treatment.*—Total excision 4; partial incision 13; nil 2; ligature of both linguals 1; ligature of one lingual 6; portion of jaw removed 3; divided 1; secondary tracheotomy 1; glands removed at operation 4; subsequently 1; ligature of lingual artery and division of gustatory nerve 1; secondary hæmorrhage 1.

*Recurrent of tongue.*—Males 2. C. 2. Recurrence interval 11 months, 7 weeks. Excision of portion of tongue in both.

*Tonsil.*—*Fatal case.*—J. P—, male, æt. 46. Sore throat 2 months. Epitheliomatous ulcer of right tonsil and side of tongue. Glands at angle of jaw. Removed by Kocher's method on 18th day. Growth involved sterno-mastoid, and glands extended to base of cranium about the internal jugular vein. Pharynx not sewn. Drainage. Temperature was raised after operation. Profuse secondary hæmorrhage on 26th day. P.M.—Common carotid found patent. Organs normal.

*Fauces.*—Males 3. C. 1, U. 2. H. F—, male, æt. 51. 5 weeks' history. Preliminary tracheotomy. Excision by Kocker's method. Discharged cured on 37th day. One case unfit for operation. One case admitted for glands. Cause undiscovered. Discharged. Epithelioma of fauces found in out-patient department.

*Fauces recurrent.*—*Fatal case.*—H. F—, male, æt. 51. Epithelioma of tonsil removed 7 months previously. Recurred lately. Small growth on left tonsil. Removed on 3rd day. Severe hæmorrhage. Internal carotid artery and internal jugular vein ligatured from an external wound at angle of jaw. Epitheliomatous glands also removed through same incision. Patient never rallied, and died soon after operation. P.M.—Trachea and bronchi contained much blood. Organs normal.

#### *Fatal cases.*

1. M. M—, male, æt. 56. Epithelioma of tongue 7 months. Commencement as pimple. Excision of right half of tongue after division of jaw at symphysis. Portion of alveolar border also removed. Drainage through floor of mouth. Temperature rose after operation, pulse rapid and weak. Wound suppurated. Death on 3rd day after operation. P.M.—Basal pneumonia. Chronic interstitial nephritis.

2. J. G. S—, male, æt. 46. Excision of tongue. Secondary hæmorrhage. Erysipelas. See Special Table III.

3. E. R—, male, æt. 68. Excision of tongue and portion of jaw. Erysipelas. Death. See Special Table III.

4. R. F—, male, æt. 59. Family history good. Small blister on tongue 3 months, caused by bad tooth. Epithelioma of tongue on left side. Incision of substance in tongue, ulcerating inside of tongue. Ligature of left lingual artery. Partial excision of tongue. Temperature rose rapidly after operation, and rhonchi appeared over lungs. Death on 7th day after operation. P.M.—Stump of tongue sloughy. New growth found under tongue, probably in gland. Lungs emphysematous and congested. Broncho-pneumonia in lower



lobe of right lung, which had progressed to formation of abscess. Spleen diffuent. Liver somewhat decomposed but normal. Kidneys injected. Brain firm but normal in other respects.

5. S. M—, female, *æt.* 54. Epithelioma of left side of tongue and floor of mouth. Ulcer on tongue extended from near lip to anterior pillar of fauces. Pain in ear. Ligature of left lingual. Removal of greater portion of tongue and floor of mouth. No glands. Wound did well, but temperature rose steadily after operation, and rhonchi appeared over both lungs. Death on 17th day after operation.

(*Esophagus*.—Males 5. R. 5, U. 2, D. 1. Distance from teeth  $13\frac{1}{2}$  inches,  $11\frac{1}{2}$  inches. Bifurcation of trachea 1; lower end 1; upper end involving larynx 1; glands involved 2; pleurisy 1.

*Treatment*.—Gastrostomy 1 (in two stages, incision parallel to ribs); tracheotomy 1.

*Fatal case*.—W. H. J—, male, *æt.* 62. Three months' difficulty of swallowing. Admitted with fluid in right pleura. Temperature raised. Death on 5th day. P.M.—Pleura contained two pints of sero-pus. Growth, a bifurcation of trachea, forming an ulcerated ring around trachea without materially narrowing the lumen. At one point ulceration had opened the pleura. Above this ring of growth was another small isolated patch of growth. Broncho-pneumonia and multiple abscesses in right lung. Obsolete tubercle at apex.

*Penis*.—Males 4. C. 4. Amputation in front of scrotum. Corpus spongiosum left long in all cases and brought through skin, while the urethra was sutured to the skin. Glands in 3, not touched.

*Secondary in glands*.—Neck 17; groin 1; previous epithelioma of lip 10; of cheek 3; of tongue 4; of groin 1. Excision in 13.

*Carcinoma of œsophagus undetermined*.—M. E. F—, female, *æt.* 33. One year ago patient began to suffer from sore throat, and even the breath became offensive. Three months ago swallowing became difficult, and food was felt to descend to a certain distance and then to be retched up again. Five weeks ago a lump appeared at the root of the neck on the right side. In the course of three weeks this tumour burst, being preceded by the bursting of an abscess in the mouth according to the patient's statement, which relieved the symptoms for a little time, so that swallowing was possible. This remission was followed by aggravation of symptoms, so that patient lived on nutrient enemata. No difficulty of breathing was complained of. On admission there was little or no swelling of neck, but two sinuses surrounded by discoloured skin were present, discharging offensive pus. Probes passed in direction of larynx and impinged on some hard substance. Spine free. Bougie showed obstruction at the level of the cricoid cartilage. Intra-ventricular bands swollen, and to the outer side of the intra-ventricular band there can be seen a spot from which pus welled up. 14th day, sinuses explored, cavity found with track leading to hyoid fossa and then down to cricoid cartilage, but it could not be made to enter pharynx, although an opening could be felt beneath mucous membrane in hyoid fossa. Cavity plugged. Rectal feeding. Fluid attempted to be swallowed comes through sinus at root of neck. 25th day, dyspnœa, tracheotomy without

anæsthetic. Cavity with hard margins opened to right of trachea at first. Trachea found to left and tube inserted. Oesophageal tube passed and food given through it. Temp. raised. Expectoration large in amount. Increased difficulty of passing tube, which was left in continuously; strength fairly well maintained. 43rd day, gastrostomy through left rectus. Stomach maintained *in situ* by lead plates. Rectal feeding. Death on 46th day. P.M.—Pharynx at the level of cricoid was much narrowed and distorted, the anterior surface being occupied by a large ulcer measuring 3 inches by 2 inches. Below this was a large irregular chasm that communicated with the trachea through left ala of cricoid and upper part of trachea. On the right of pharynx a fistula led to the surface of the neck. Ulcer did not give the appearance of malignancy, nor were the edges hard or wasted. A gland was removed from the right side of neck, which was hard and tough on section; this was translucent, and under the microscope showed columns of cells that recalled thyroid tissue, so that it was possibly an accessory thyroid, or if not this a malignant growth. No section of ulcer was made. Lungs emphysematous. Patch of pneumonia in lower angle of upper lobe of right lung, probably due to aspiration, presented both red and grey hepatisation. Gastrostomy wound was in good condition, and situate midway between cardiac and pyloric extremities, and rather nearer the lower than the upper border of stomach. Stomach walls were thin and atrophic.

*Rodent ulcer.*—Males 1, females 3. C. 3, U. 1. Duration 10 years, 14 months, 6 years, 2 years. Situation: nose 1; forehead 1; cheek and ear 1; cheek 1.

*Treatment.*—Excised 3; plastic 1; grafted 1; operation not advised 1.

*Recurrent rodent ulcer.*—Female 1. C. 1. Duration, 7 years. Interval since removal, 7 months. Situation, outer canthus. Excision.

*Sarcoma.*

*Myeloid of upper end of tibia.*—L. D—, female, æt. 18. Eight months' swelling of upper end of tibia. Soft tender spot below tubercle. Incised. Free hæmorrhage, thought tuberculous. No sign of tubercle discovered. Readmitted in 1896.

*Recurrent sarcoma of superior maxilla.*—F. 2. R. 2. Readmission 1. E. L—, female, æt. 51. Commenced 7 months previously. Partial excision of jaw 5 months previously. Subsequent recurrences 7 months and 8 months from first appearance. Growth removed both times.

*Clavicle.*—J. J—, male, æt. 61. Fractured rib 5 years ago. Six months later a tumour appeared on chest. Three months ago swelling appeared over right shoulder, and 5 weeks ago a swelling on inner end of right clavicle. Re-admission. Swelling over 8th rib on right side, just outside nipple line, not adherent to bone. Pulsation doubtful. Over the clavicle tumour size of Tangerine orange, but not very prominent, fixed to bone, pulsated. On right shoulder swelling unattached to deep structures, pulsated. Discharged unrelieved on 16th day.

*Lympho-sarcoma.*—A. B—, male, æt. 42. Duration 3 years. Previous attempted removal. Large mass on right side of neck, pains beneath clavicle. Ulceration. Antitoxin treatment. Hæmorrhage from growth, stopped by pressure. Discharged on 67th day.

*Sarcoma of glands of neck.*—W. L—, male, æt. 54. Malignant disease of

larynx 9 months. Admitted for dyspnœa; tracheotomy. Immediate relief, but sudden death occurred next morning. P.M.—Destruction produced by white soft mass between the lower end of larynx and œsophagus, which had pushed the larynx to one side, and bulged its wall below the cords without actually invading its substance. Glands of both sides of neck infiltrated. Growth was a large round and large spindle-celled sarcoma in about equal quantities.

*Sarcoma of neck.*—Males 2, C. 1, D. 1.

1. A. P—, male, æt. 64. Sixteen weeks previously a swelling appeared behind left sterno-mastoid, about its middle, which burst 10 weeks previously, since when other tumours have appeared about the neck. On examination, there is a crater-like opening behind left sterno-mastoid in the centre of a somewhat raised tumour. Skin about this is indurated and discoloured. Probe enters 1 inch. No bone. To the left of occiput is a fluctuating swelling the size of a hen's egg, and near it several large nodules. Spine, as felt through pharynx, normal. Rotation movements of spine rather limited. Sudden death on 5th day. P.M.—Growth formed of greyish-white substance of dense consistence, infiltrating all structures. In the breaking down part were some calcareous nodules. Growth had not originated in tonsil, salivary glands, or skin. Œdema of glottis and palate. Broncho-pneumonia.

2. J. S—, male, æt. 33. Tumour appeared 8 months previously. Hard elastic rounded tumour behind right sterno-mastoid, passing back for 3 inches and up for  $2\frac{1}{2}$  inches, while below it dipped beneath clavicle. Excised, shelled out. Discharged cured on 21st day. Microscopically spindle-celled sarcoma.

*Sarcoma of parotid.*—C. D—, female, æt. 69. Gradually increasing tumour for 4 years. Stationary for 6 years. Ulcerated 2 years ago. Prominent pear-shaped tumour of left parotid, the small end being most prominent and ulcerated. Excised, shelled out. Discharged cured on 41st day. Microscopically round-celled sarcoma.

*Sarcoma of kidney.*—D. S—, female, æt. 2 years. Tumour in right kidney region reaching up to ribs and to mid-line internally, and below to level of umbilicus. History of blow, 1 month after which tumour appeared. Hæmaturia. Refused operation.

*Sarcoma of abdominal wall.*—A. M—, female, æt. 23. Two years' history. Tumour situated just internal to ant. sup. spine, size of a man's fist. Moveable laterally, but not up and down. Bursæ felt to run from tumour to iliac crest. Incision. Tumour in abdominal wall, encapsuled. Peritoneum exposed but not opened. Discharged cured on 53rd day. Microscopically spindle-celled sarcoma.

*Melanotic sarcoma.*—*Shoulder.*—F. McM—, male, æt. 27. Commenced as a pimple 2 years previously, gradually increasing in size. Glands appeared in axilla 6 months previously. Tumour  $1\frac{1}{2}$  inches in diameter. Black in centre. Skin red and adherent. Glands in left groin suppurating. Excision of growth and glands of axilla and groin. Discharged relieved on 42nd day.

*Recurrent of chest.*—J. W—, male, æt. 35. Commenced as pigmented spot internal to nipple 6 months ago, when it was removed. On examination, a dark pigment spot, size of hazel-nut, somewhat pedunculated, just internal to nipple. Removed with nipple. Readmitted in 3 weeks with glands involved, which



were removed. Readmitted in 4 months with recurrence in glands and scar. Excised. Readmitted in 1 month with growth on axillary border of scapula and beneath apex of scapula. Discharged unrelieved.

### SIMPLE TUMOURS.

*Myxoma*.—W. H. B—, male, æt. 29. Duration 23 years. First appeared as a small hard nodule. Gradual increase in size, painless. Large tumour in left axilla towards anterior border, freely moveable. Small separate piece above. Shelled out. Lobulated surface contained loculi filled internally with some transparent jelly, which varied in colour between yellow, brown, and grey. Discharged cured on 22nd day.

#### *Umbilical polyp.*

1. A. G—, male, æt. 23. Policeman. Discharge from umbilicus 8 weeks, with pain. Small "pimple" appeared, which gradually increased in size until it formed a pedunculated growth the size of a walnut. Abdomen around umbilicus indurated and tender. Two days after admission an oval body, the size of a walnut, was seen and extracted. Smooth on surface, of fairly hard consistence, and of light yellow colour. Homogeneous on section, and composed of epithelial débris and hairs about a nucleus of cotton fibre. Sinus and polyp quickly disappeared.

2. A. S—, male, æt. 30. Discharge from umbilicus 5 years. Pain 1 month. Polyp 5 days, which is now size of cherry. Sinus explored and opened up. Found to run in various directions in abdominal wall. Body size of cobnut found, soft in consistence, yellow in colour, laminated on section, with dark nucleus. Discharged with superficial wound. Constitution similar to (1), without cotton fibre.

*Papilloma of scrotum*.—W. S—, male, æt. 19. Tuberculous sinus of neck 6 years previously. Admitted with tuberculous sinuses in neck, and discharge; sore on scrotum on left side. Skin of scrotum on left side and also on portion of adjacent thigh is converted into a papillomatous condition, the surface presenting a number of wart-like papillomata. Skin affected excised. Discharged cured as regards scrotum on 63rd day.

#### *Cysts.*

*Tenous cyst*.—G. P. R—, male, æt. 31. Corn merchant. First noticed swelling on right side of neck 6 weeks previously. It had not altered in size since. No pain. Four days before admission the tumour was tapped, but only blood withdrawn. After this it was collapsed, but filled again in 4 days. On examination soft fluctuating lobulated tumour situated just behind sternomastoid and clavicle, beneath which it dips. Subtriangular in shape, with base towards the front, from which a short rounded prolongation runs upwards. Pulsation present, but not true expansile pulsation. Tapped 9 days later, 6 ounces of pure blood withdrawn, dark in colour. Gradually refilled. Chest had a depressed sternum. No dulness below right clavicle. Operation on 25th day. Partial excision. Internal jugular passed over inner side of tumour, but its connection was doubtful. A ligature was applied and a portion of vein excised. Cyst opened, extended beneath clavicle. Subclavian vein wounded, and the



clavicle was divided to secure it. Upper part of tumour tied off and excised, lower portion left. Discharged on 29th day after operation. Wall of cyst under microscope presented smooth lining, while the substance of wall was composed of fibrous tissue and unstriped muscular fibre.

*Hydatid cyst.*

1. M. B—, female, æt. 34. Abdomen began to swell 5 years ago, and in 3 months reached almost its present size. Occasionally attacks of vomiting. An attack of jaundice. Tapped 4 years previously, and 40 litres of fluid withdrawn. Admitted to hospital. Tapped, and nearly 5 pints of brownish fluid withdrawn, which contained bile pigments. Refused operation, but was again admitted to undergo an exploratory incision. Abdomen greatly distended but not rigid. Tumour occupied right hypochondriac, lumbar, and partially the iliac regions, and passed the middle line, but did not encroach in the left lumbar region. Dulness on percussion in the regions occupied by tumour, which did not alter with position. Good fluid thrill. Legs œdematous. Cœliotomy on 3rd day, between umbilicus and pubes. Cyst cavity opened without the peritoneum being interfered with. Four gallons four pints of brownish fluid withdrawn. This as before contained bile pigment. Incision enlarged, and large yellow-brown semi-transparent flakes evacuated in large quantities. Hand introduced passed through a constriction, and then passed up behind the clavicle. Cyst irrigated. Tube inserted. Suppuration ensued, but temperature was kept down by frequent irrigations. Some cystitis. Bile found in urine. Progress eventually good, and patient discharged on 160th day with small sinus.

2. W. A. D—, male, æt. 33. Patient, who had never been abroad, was admitted with history of swelling in abdomen for 4 years. Gradual slow enlargement. Some discomfort lately and loss of appetite. On admission, rounded flat tense swelling in epigastric and umbilical regions. Dull on percussion. Fluctuation and thrill doubtful. No tenderness. Communicated pulsation not connected with ribs, and descended on deep inspiration to leave space of 1 inch between it and the ribs. Liver dulness commenced at sixth rib on right nipple line. Liver edge not felt below ribs. Band of resonance between ribs and tumour. Breath-sounds almost absent over left chest, but behind at the back there was tubular breathing on forced inspiration. Cardiac dulness commenced at fourth rib. Apex-beat in fifth space. 2nd day, cœliotomy over tumour. Hydatid cyst connected with under surface of left lobe of liver, which was thinned out over it. True cyst and daughter cyst evacuated. Adventitious cyst stitched to belly-wall. Drainage. Some local suppuration ensued, and patient suffered severely from bronchitis, so that he was in a critical condition, but eventually did well. Abdominal wound closed on 66th day, having discharged bile for some time. Dulness on apex of left axilla noticed on 9th day. Evident bulging of left chest on a level with the third rib, between nipple line and anterior axillary line. Superficial veins here prominent. From deficiency of breath-sounds on left side it appeared that something was pressing on the left bronchus. 77th day, semicircular flap raised. Fourth and fifth ribs resected just anterior to anterior axillary fold. Cyst adherent above. Aspiration. Cyst wall incised. Endocyst evacuated. Measured 4 inches by 5 inches. Drainage. 78th day, patient coughed up considerable quantity of blood and

mucus. Temperature rose after operation. Cavity became foul. Irrigation. Pulse rapid. Large quantity of blood-stained fluid escaped from wound, gradually becoming almost pure blood. Collapse. Death on 108th day. P.M.—Abdominal wound completely healed. Left pleura adherent at apex and over hydatid. In the remainder of its extent it was non-adherent, and contained 15 ounces of purulent blood-stained fluid. Apex of left lung contained a hydatid cyst, over which the pleura was adherent. It was situated towards the posterior surface, and was quite superficial. It contained clear fluid, and was the size of an orange. Middle of the same lung had contained the hydatid that had been evacuated, and whose adventitious cyst was now full of blood, the source of which could not be found. The cavity was as big as two fists, and just above it was a patch of pneumonic consolidation. The cyst had apparently arisen between the two lobes of the lung, or had separated them. Some collapse at the base of the left lung, while the right lung was congested. Liver hydatid was only represented by a scar. On the under surface of the right lobe was a pyriform hydatid cyst, the size of a distended gall-bladder, and contained only clear fluid.

S. C— female, æt. 53. A gradually increasing tumour under ribs on right side for 25 years, while for the last three years the growth has been more rapid. On admission, a large, rather flat tumour in the right hypochondriac and lumbar regions. Dull on percussion. Tense but fluctuating, and affording the hydatid thrill. Liver not enlarged, while its dulness was continuous with that of the tumour. Spleen enlarged and tender. Cœliotomy in semilunar line over the most prominent portion of the liver. Hydatid fluid, endocyst with daughter cysts evacuated. Irregular cavity, endocyst stitched to abdominal wall. Drainage. After operation albumen in urine diminished from  $\frac{1}{2}$  to  $\frac{1}{20}$ . Temperature rose to 102° F. Diarrhœa. Death on 6th day after operation. P.M.—Peritoneum normal. Cyst was connected with the under surface of the right lobe of liver, while it was attached by dense adhesions to the right kidney, which was normal. The cyst had rotated the whole liver over to the left. The interior was rough, and presented numerous ramifications. Right lobe of liver contained a calcified hydatid.

*Pancreatic cyst.*—E. C—, female, æt. 40. No history of injury. Commenced with pain in left inguinal region, shifting to left hypochondriac and lumbar regions 7 months previously. Pain was continuous, greatly increased on walking. Two months later a tumour was first noticed. Two months before admission mammae began to swell, and the superficial veins of the thorax began to enlarge. No vomiting or emaciation. *On examination.*—Swelling in abdomen, median, globular in shape, having the umbilicus for its most prominent point. Dull on percussion. No extension into the pelvis or either flank. Pelvic organs free and unconnected with tumour. Urine normal. Fourth day cœliotomy between pelvis and umbilicus. Tumour behind the transverse mesocolon. Tapped and 31 ounces of clear fluid removed. Cyst was then found to spring from pancreas. Cyst multilobular, and contained some small grains of hard substance and one bean-shaped body about  $\frac{1}{4}$  inch in diameter, which proved later to be oxalate of lime. Greater portion of cyst removed, the remainder sutured up to abdominal wall. Tube inserted, but little discharge from wound. Progress uneventful. Discharged with granulating surface on 63rd day. Fluid from

cyst showed sediment after settling. Reaction faintly acid. Sp. gr. 1020. Fair trace of albumen. Amylolytic ferment. Deposit consisted of spherical cells of various sizes and amorphous débris.

*Ovarian cysts.—Adenoma.—Females 5. C. 5.*

1. L. A. A—, æt. 31. Duration 6 months. Tumour extends from costal margin to pelvis. Ovariectomy. Fourteen pints of fluid drawn off. Cyst between layers of broad ligament. Discharged on 26th day.

2. A. S—, æt. 58. Duration 18 months. Tumour reached up to mid-point between umbilicus and sternum. Ovariectomy. Many adhesions. Tumour of left ovary multilocular. Right hydrosalpinx. Discharged on 22nd day.

3. K. T—, æt. 22. Duration 1 month. Tumour reached  $1\frac{1}{2}$  inches above umbilicus. Ovariectomy. Clear fluid in abdomen. Cyst multilocular. Hole found in one cyst through which contents had escaped. Discharged on 27th day. Probably left tumour.

4. A. C—, æt. 35. Confined two days ago. Tumour noticed after confinement. Ovariectomy. Three pints of fluid. Adhesions to anterior abdominal. Tumour of right ovary. Multilocular tumour. Discharged on 24th day.

5. A. N—, æt. 31. Confined 14 days previously, after which a tumour was discovered. Two days later abdomen began to swell, and 7 days from confinement vomiting set in with severe abdominal pains. Temperature raised. Tumour extends up to ribs. Ovariectomy on 14th day after confinement. Tumour infiltrated with blood. Few adhesions. Three quarts of bloody fluid withdrawn. Pedicle said to be twisted  $3\frac{1}{2}$  times. Abdomen irrigated. Discharged on 27th day.

6. H. B—, æt. 40. Duration 8 months. Tumour reached above umbilicus. (Edema of left leg. Ovariectomy. 108 ounces of fluid withdrawn. Cyst multilocular. Discharged on 25th day.

*Suppurating ovarian cyst.—M. A. C—, female, æt. 50. Pain on micturition and abdominal tumour 3 weeks. Tumour in hypogastrium, tender on pressure. Tumour in Douglas's pouch to the right. Fluctuation to be felt through to tumour in abdomen. Uterus pulled to the right and elevated. Temp.  $100\cdot2^{\circ}$ ; pulse 120. Cæliotomy. Fluctuating swelling found which appeared to be a large tube. Abdominal cavity shut off, the tumour incised, and pus evacuated. Tube inserted. Patient sank and died on 8th day after operation, the temperature having risen to  $102\cdot8^{\circ}$  F. P.M.—Pelvis filled with matted intestines containing loculated abscesses in the interstices. Thick-walled, suppurating, ovarian cyst, adherent to intestines and pelvic wall. Apex had been opened, but cavity contained 2 ounces of pus. Fallopian tubes apparently healthy. Left ovary atrophic. Kidneys slightly granular on surface. Lungs emphysematous. No general peritonitis.*

*Ovarian dermoid.—Females 2. C. 2.*

1. E. E—, æt. 18. Duration 2 years. Swelling varied in size. Tumour reached some way above umbilicus, at which level there was a sulcus across tumour, above which a thrill can be obtained. Ovariectomy. Tumour tapped. Little or no fluid obtained. Cyst burst during extraction; contained bone, teeth, and caseous material. Weight without fluid 15 lbs. Fluid = 5 pints. Suppurative parotitis. Discharged on 29th day.



2. F. M. B—, æt. 55. Duration about 10 or 12 years. No pain till 3 months. Tumour reached from pelvis to ribs, which latter are expanded. Cœliotomy. No adhesions. Hard fibroid of uterus felt and brought outside, when malignant nodules were found on its surface and on the parietal peritoneum. A second white glistening tumour found behind the first. This was tapped, and 4 pints of brown fluid drawn off. Proved to be dermoid tumour of the left side, adherent to intestines by the plaques of malignant growth. Dermoid removed. Peritoneum divided round fibroid; serre-nœud applied and sutures divided through cervix. Stump treated extra-peritoneally. Discharged on 68th day. Fibroid weighed  $30\frac{1}{2}$  lbs. and measured  $13 \times 13 \times 4$  inches. Dermoid contained bone and teeth. Nodules in dermoid were carcinomatous, the type being neither columnar nor squamous. Secondary nodules in fibroid were spheroidal-celled carcinoma.

### VASCULAR SYSTEM.

*Varicose veins.*—Males 44, females 21. C. 59, R. 2, U. 4. One of abdomen, remainder of lower extremities. Excision in 52.

*Varicocele.*—Males 69. C. 63, R. 1, U. 5. Excision of portion of veins 46. Subcutaneous ligature 18. Double 3. Remainder left. Recurrent 1.

*Popliteal aneurysm.*—Males 2. C. 2.

1. Wm. P—, male, æt. 45. No history of syphilis or trauma. Duration 4 to 5 weeks; gradual increase since. Skin shiny and tense; leg flexed, complete extension impossible. Ligature of superficial femoral at apex of Scarpa's triangle with kangaroo tendon. Gangrene. Line formed at junction of upper two thirds and lower third of leg. Aneurysm slit up and clots turned out. Amputation of leg in lower third. Anterior flap sloughed. Suppuration extended up leg to popliteal space and thigh. Carden's amputation. Discharged with all wounds healed on 180th day.

2. W. T. T—, male, æt. 35. Previous left popliteal aneurysm cured by ligation in continuity of the superficial femoral at apex of Scarpa's triangle in July, 1894. History of syphilis. Present aneurysm on right. Duration 3 weeks. Tense tumour. Edema of leg. Ligation of superficial femoral artery in continuity at apex of Scarpa's triangle with stay-knot of goldbeater's skin. Discharged with small hard tumour in right popliteal space on 46th day. No remains of opposite aneurysm to be felt.

*Hæmophilia.*—Males 2. R. 1, D. 1.

1. E. C—, male, æt. 18. Brother died of bleeding from wound of tongue. Patient had severe hæmorrhage from gums 6 years ago. Admitted for bleeding from tooth socket after extraction. Plugged. Discharged on 8th day.

2. *Fatal case.*—H. T—, male, æt. 15 months. No family history of bleeding. Child, who was said to bruise very easily, fell down and bit tip of tongue 7 days previously. All attempts to stop hæmorrhage were unavailable. Temperature rose. Death on 5th day. P.M.—Few bruises on body; small subperiosteal hæmorrhage above right ear; patches of collapse in lungs; internal organs anæmic.

*Senile gangrene.*—Males 2, females 3. C. 2, R. 1, U. 1, D. 1. Readmission 1.

1. M. B—, female, æt. 70. Trauma 2 days previously. Small ulcer on dorsum



of foot with black edges. No albumen or sugar in urine. Gangrenous process extended. Red blush on dorsum. Amputation in upper third of leg; very little bleeding. Post-tibial artery had very small lumen, this being produced apparently by endarteritis. Some sloughing of flaps. Progress otherwise good. Discharged on 99th day with small granulating surface. No note about general arterial condition. No mention of syphilis.

2. F. G—, female, æt. 59. No history of syphilis or trauma. General arterial disease. Second right toe mummified. Discoloration on dorsum of foot commenced 6 weeks ago with pain and tingling. No albumen or sugar in urine. No disposition to heal. Small trace of albumen found. Amputation in lower third of leg on 29th day. Flap sloughed. Reamputation in lower third of thigh on 36th day. Some slough again of flaps. Discharged on 68th day with granulating surface. Three weeks later patient was attacked with pain in the fingers of right hand, and a fortnight later was readmitted with a mummified condition of the same finger and of toes of left foot. Discharged on the 24th day.

3. J. B—, male, æt. 65. Previous history of gout in right foot. No history of syphilis. Started with suppuration under great toe-nail, caused by tight boots about 1 month previously. Skin gangrenous on 3rd and 4th toes. Trace of albumen in urine. Treated antiseptically. Sloughs separated. Albumen disappeared. Discharged on 34th day.

*Fatal case.*—R. W—, male, æt. 59. Small black slough on dorsal surface of second toe of the left foot, which had been present 14 days. Foot was dressed with Lot. Sodæ Chlor. Slough began to separate well, when the patient suddenly expired while sitting up to eat his dinner. P.M.—Left pleura obliterated; right lung firmer than normal, and rather shrunken; left lung emphysematous and congested. Heart large from hypertrophy of left ventricle; valves competent; muscular substance soft and pale. Post-mortem clot in pulmonary artery. Kidneys slightly granular on surface.

*Embolie gangrene.*—M. C—, female, æt. 42. Sudden pain in right hand 3 weeks previously. Gangrene commenced in fingers 2 weeks previously. On admission hand and forearm cold. Finger, thumb, palm, and lower part of dorsum of hand in state of dry gangrene. Forearm: skin white, while two patches of necrosed skin are present on the ulnar side, with area of inflammation around them. Pulse lost in middle of arm. Systolic murmur over fourth space. Amputation of arm on 8th day in the upper third by circular method. Stump did well, but patient developed temperatures due to pleurisy and bronchitis. Heart irregular. Death on 28th day. P.M.—Pleurisy on left side over base of lung, which was in state of grey hepatisation; œdema and collapse of upper lobes. Left ventricle hypertrophied; valves normal. Axillary and other arteries healthy, and contained only recent clot. Depressed scars in liver and kidneys. Small caseous infarct in spleen.

*Traumatic spreading gangrene.*—S. S—, male, æt. 43. Cut of right wrist by broken teapot 8 days previously. Wound was deep and divided vessels, so that they required ligature. Injury followed by swelling and redness of skin in situation of wound. Condition became rather worse when, 2 days before admission, arm began to feel cold. Patient admitted in a state of considerable prostration. Whole of the forearm and lower part of the arm was of a purple-black

colour, with blebs on surface filled with fluid. Surface cold. No definite line of demarcation. Odour foul. Temperature normal. No emphysema in skin. Amputation of arm in upper third. Death 1½ hours after operation.

*Gangrene of foot, right.*—M. W—, æt. 2 months. Delicate and puny child since birth. Reared on Nestlé's food. Twenty-four hours before admission mother noticed child's foot was swollen, since when the toes have become gradually black. On admission child extremely feeble and anæmic. No visceral disease. The right leg and foot are swollen and œdematous; skin tense and shiny. The whole dorsum of the foot and the dorsal and plantar surfaces of toes are discoloured, the colour ranging from purple to black, the change being most marked in the great toe. On the right heel is a circular ulcer with sloughy base, while there is also a circular ulcer on the left heel. Both feet are warm. Femoral vein and artery are free. Appearance of skin on right leg reminds one of scleroderma. Child gradually sank and died without change of local condition within 2½ hours of admission. P.M.—Epidermis separated in blebs over affected area. On section of affected part it was seen that the gangrenous process became more superficial as it ascended the leg, and in big toe the gangrenous process had not extended down to bone. A fair line of demarcation was present. Arteries from femoral downwards were healthy on both sides.

#### *Thyroid.*

*Parenchymatous enlargement.*—Males 2, females 4. C. 3, R. 2, U. 1. Stridor on deep inspiration, and excision of isthmus between ligatures 1; difficulty of breathing on exertion, but no stridor, and excision of portion of lateral lobe between ligatures, with relief to breathing after 11 days, 1; remainder no stridor, with medicinal treatment.

*Adenoma.*—Male 1, female 1. C. 2. Right side in both. Hæmorrhage into adenoma in female.

H. B—, male, æt. 22. Duration 4 to 5 years. Voice altered 6 months. Large elastic tumour in situation of right lobe; lobulated with one lobule, stony hard, situated to inside of growth. Isthmus enlarged, also left lobe, which has a hardish nodule towards inferior part. Larynx pushed to one side. Wall of pharynx bulged. Cords move well. Excision of tumour, encapsuled; composed of many separate lobules, with large veins in interlobular spaces. Some lobules presented ordinary structure of thyroid tissue to the naked eye, others had undergone cystic degeneration, while a third set showed distinct evidences of hæmorrhages. The hard mass turned out to be calcareous degeneration of a lobule. Discharged cured on 52nd day. Specimen in museum.

*Cysts.*—Male 1, females 3. C. 3, R. 1. Stridor in 1. Excision in 3. Trachea flattened 1. *Contents.*—Brownish gelatinous fluid 1; altered blood-clot and cholesterine crystals 1. Wound plugged on account of hæmorrhage 1. *Situation.*—Left 1, right and isthmus 2.

*Multilobular.*—A. S—, female, æt. 45. Duration 24 years. Large tumour of both lobes and isthmus. Lobes reach from clavicle to inferior maxilla. Deep sulci between lobes and isthmus. Surface hard and nodular, resembling a bag of marbles. Slight stridor. Pyramidal lobe found enlarged. Operation difficult on account of huge size of veins between the lobules. Removal of isthmus between ligatures. Hæmorrhage restrained by acupressure and silk. Lower

part of wound left open. Breathing said by patient to be easier 2 days after operation. Course good. Discharged on 45th day.

### DIGESTIVE SYSTEM.

*Syphilitic contraction of pharynx.*—J. S.—, male, *æt.* 50. Patient, who was mentally deficient, noticed difficulty of swallowing some months ago, which increased until even bougie could not be passed. On day following admission gastrostomy was performed through left rectus muscle. Stomach opened, tube inserted, food injected. Stomach held up to wall by harelip pins and sutures. Patient sank and died on 4th day in spite of stimulant and food. P.M.—Wound satisfactory. Stomach normal size. Nose depressed. Perforation of palate. Entire pharynx converted into thick, dense cicatricial tissue, which was pigmented and ulcerated. At level of thyroid cartilage the lumen of the pharynx admitted only the finger tip with difficulty. Lungs congested and œdematous. Slight depression over right motor convolution of the brain. Small patch of yellow softening in right optic thalamus. Central vessels normal.

#### *Hernia.*

*Reducible inguinal.*—Males 92, females 12. C. 91, R. 4, U. 9. Funicular 5; congenital 6, exclusive of those included under undescended testis, one of which was in an acquired sac. Hernia of ovary 1; Fallopian tube (double) 1; also doubtful case (single) 1. Hernia double in 9 cases.

*Treatment.*—Ligature and ablation of sac, with approximation of pillars with or without conjoined tendon, 57; Macewen's method 21; Kocker's method 3; sac ligatured and ablated only 10; pillars only sewn 3; veins of cord ablated 1.

*Reducible femoral.*—Male 1, females 9. C. 8, R. 1, U. 1. Sac ligatured and ablated, fascial flap 5; sac ligatured and ablated 2; sac not seen 1.

*Reducible umbilical.*—Female 1. C. 1. Congenital; yielding of umbilical cicatrix with fibrous symphysis and bifid clitoris.

*Irreducible inguinal hernia.*—Males 27, females 2. C. 23, R. 5, D. 1. Complicated with vomiting 3; inflamed 2; hæmatocele of portion of sac 1. Taxis 2; taxis with chloroform 1; spontaneous reduction 2; ice-bag and hot bath and taxis 3; cœliotomy with herniotomy 1.

*Fatal case.*—A. B—, male, *æt.* 42; plumber. Hernia for 24 years. Irreducible 3 years. Patient fat and alcoholic. Large irreducible left inguinal hernia, resonant on percussion. On the morning of the 28th day after admission, while an enema was being administered, the patient was seized with severe abdominal pain in region of umbilicus, there still being an impulse in the hernia. Morphia was injected 9 hours later. Patient not having improved, but being still in a drowsy condition from morphia, with weak, feeble pulse and cyanosed face, the hernia was incised; found to consist entirely of sigmoid flexure, which was not adherent, but still irreducible. Incision continued up into abdomen along semilunar line; portion of descending colon found black, but no perforation and no sign of constriction. Gut reduced into abdomen. Paul's tube inserted into gangrenous portion, which was left outside and wound closed. Sac not touched. Patient in precarious condition. Rallied somewhat. Distension of abdomen in spite of fœcal discharge, and death on 3rd day after operation. P.M.—Paul's tube inserted 33 inches from anus. The loop into which Paul's



tube was inserted was black, and of doubtful vitality for space of 6 inches, and the whole thickness of the wall rotten and feeble. The mucous surface of the bowel was lined for space of 4 inches by a nearly continuous *quasi*-diphtheritic membrane of yellowish colour, partly composed of necrosed mucous membrane, and partly of inflammatory products. There was a little adhesive peritonitis in left iliac fossa, but no perforation. Lungs congested and œdematous. Heart large; atheroma of coronary arteries. Liver large and fatty. A tube inoculated from under surface of membrane gave a pure culture of *Bacterium coli-commune*.

*Irreducible femoral hernia*.—Male 1, females 7. C. 6, R. 1, D. 1. Sac ligatured and ablated, with stitching of fascia, 4; sac ligatured and ablated 2; sac not seen 1.

*Fatal case*.—M. W—, female, æt. 46. Hernia 17 years. Truss till lately, when it ceased to keep up the hernia, which became irreducible. Operation advised. Radical cure. Adherent omentum in sac, which was ligatured and ablated. Sac excised; neck stitched up; fascia stitched over it. Temperature rose steadily after operation to 103° on 6th day. After operation, on 7th day, patient became suddenly collapsed, and died in a few hours, having vomited coffee-ground substance. P.M.—Wound healthy; no peritonitis. Body very fat. Heart surrounded by fat, and very fatty throughout its substance. Collapse of lower lobe of right lung. Other organs normal.

*Irreducible umbilical hernia*.—Male 1, females 4. R. 2, U. 1, D. 2. Obstructed 2.

#### *Fatal cases.*

E. A. B—, female, æt. 56. Hernia 2 years. 3 days' vomiting and diarrhœa. Radical cure. Colon in sac, healthy, returned; omentum ligatured and ablated. Temperature raised and fluctuated, just reaching 101°. Bronchitis. Some sup-puration in wound. Pulse 120. Patient gradually became weaker and weaker, and died on 14th day, without at any time showing any rapid change. P.M.—Peritoneum full of gas and liquid fœces which had escaped from stercoral ulcers of cæcum.

H. S—, female, æt. 53. Hernia 5 years. Irreducible 18 months. Admitted with signs of obstruction in hernia. Treated with enemata, and discharged on 4th day. Readmitted in 17 days with faecal abscess in sac. Incised; fœces and pus evacuated. Vomiting. Pulse weak and rapid. Death on 5th day after readmission. P.M.—No strangulation of herniated transverse colon. Cæcum dilated, seat of stercoral ulcers, one of which had perforated and caused acute peritonitis.

*Irreducible ventral hernia*.—Males 3. C. 2, U. 1. Subperitoneal fat 1, ablation of fat 1, suture of recti, 1. Omental 2; ablation of omentum and sac, suture of recti, 1.

#### *Peritonitis.*

1. W. G—, male, æt. 19. Pain in abdomen for 27 days, not apparently localised. Abscess pointed at umbilicus, incised 9 days before admission. Admitted with umbilical sinus discharging foul pus. Irrigation. Multiple incisions; continued irrigation. Pus apparently around intestines. Discharged on 109th day with sinus at umbilicus.

2. J. MacC—, female, æt. 25. Pain in abdomen 9 days. Discharge from



umbilicus 6 days. Severe pain in abdomen 4 days, necessitating rest in bed. No vomiting; bowels regular. Abdomen tense and distended; sinus at umbilicus. Sinus explored; found to enter abdomen. Cœliotomy. Pelvis full of pus; adhesions about umbilicus; loculated abscess to right of umbilicus; pelvis congested. Drainage for 19 days. Septic pneumonia. Subsequent good recovery. Discharged on 37th day.

*Fatal cases.*

1. S. D—, male, æt. 45. Pain in right iliac fossa 3 months. Abdomen distended; some dulness in right iliac fossa. Constipation. Incision in right iliac fossa; pus evacuated; plaques on peritoneum found that were supposed to be tubercle. Irrigation. Drainage. Death in few hours. P.M.—Gangrenous small intestines matted together just to right of mid-line. General septic peritonitis. Diaphragmatic and parietal peritonitis covered by spots of fat necrosis.

2. W. K—, male, æt. 25, waiter. Fall on to back while opening a door 4 days before admission. On the following day complained of dull aching pain in abdomen, becoming at times very sharp. In spite of this he kept about his work until day before admission, when he took to his bed. When admitted the abdomen tense, rigid, and exquisitely tender. Percussion showed a little dulness above pubes, but none in flanks. Pulse rapid. No vomiting. Eyes sunken. Temp. 102·2°. Cœliotomy in mid-line. Pus found in pelvis and lower part of abdomen. Appendix not seen. Local irrigation; tube into pelvis; wound closed. Patient rapidly improved. Bowels open. Seven days tube out. Progress good until 18th day, when temperature reached 101°, whereas since operation it had been normal, or only up to 100° F. Temperature remained up, reaching at times 102·2° F., and general condition slowly deteriorated, until on 25th day patient was again very ill, with sunken eyes and pinched features. Dulness detected in splenic region, and an exploration through pleura at level of tenth ribs, in mid-axillary line, showed the splenic region apparently healthy. 27th day, exploration in right semilunar line, near costal margin, gave exit to turbid serum. Pus also seemed to come from right iliac fossa, so an incision was made in this region by cutting down on finger. Pus and gas at once escaped. Upper incision closed. Pelvis drained by tube through second incision. Two hours later feculent matter discharged through hole. After this patient sank, and died on 29th day. P.M.—General septic peritonitis. Localised abscess bounded by spleen, stomach, and diaphragm. Incision through pleura had failed to open peritoneum, and so evacuate the pus. Perforation of small gut at seat of incision in right fossa, but it was doubtful if this was done before death. Appendix adherent in pelvic brim, but no perforation or ulceration found in it. No other cause for peritonitis found.

*Intussusception.*—Males 2, female 1. C. 1, D. 2. Ileo-cæcal in 2; nature doubtful in 1. Cœliotomy and reduction in 2; inflation in 1, which was too bad for operation and died.

*Fatal case.*—A. E. A. M—, female, æt. 7 months. Suddenly attacked with pain in abdomen, vomiting, and passage of blood and mucus 24 hours previously. Sausage-shaped tumour in region of splenic flexure. Partial reduction by inflation. Cœliotomy. Ileo-cæcal intussusception. Reduction by manipulation. Temperature rose after operation. Child restless. Death on 3rd day. P.M.—Peritoneum healthy. Cæcum, last 2 inches of ileum, and proximal half of

appendix much congested; mouth of latter  $\frac{1}{2}$  inch in diameter, and the whole organ easily intussuscepted into cæcum. Organs normal. No cause for death.

*Fæcal fistula.*—C. B—, female, æt. 20. Removal of suppurating ovarian some time previously. Fæcal fistula between umbilicus and pubes. Cœliotomy. Fistula led into sigmoid flexure and lower part of rectum. Fistula excised. Sigmoid united with rectum by lateral anastomosis with  $\frac{3}{4}$ -inch Murphy's button. Button passed on 10th day. Discharged on 49th with fæcal sinus still. Bowels acted naturally also as before. Condition slightly better.

*Acute appendicitis.*—Males 5, female 1. C. 3, D. 4. Incision and drainage in all non-fatal cases, the incision being in mid-line in 1 and in iliac fossa in 2; pus found beneath incision in all.

*Fatal cases.*

1. G. Ll—, male, æt. 18. Admitted on 9th day of attack. Collapsed. Right flank dull. Cœliotomy. Turbid fluid evacuated; drainage. Incision in loin; foul pus evacuated; drainage. Death in few hours.

2. W. C. C—, male, æt. 26. Vomiting and intense pain over whole abdomen 5 days. Similar attack some years previously, when pain was restricted to right iliac fossa. Admitted with pinched features and sunken eyes. Restlessness. Cœliotomy in mid-line; fæcal pus. Appendix found apparently sloughed off, and fæces escaping from cæcum. Stump ligatured. Abdomen irrigated. Intestines purple and greatly distended; several tension tears in peritoneal coat. Paul's tube inserted. Abdomen closed, wound having been made in flank for drainage. P.M.—Acute general peritonitis, with flakes of lymph. Drainage of gut was 33 inches from cæcum in the small intestine. Vermiform appendix perforated about 1 inch from base; opening large and sloughy. Beyond this point the organ was represented by a fibrous band that lay behind the cæcum. No concretion. Only slight ulceration of mucous membrane opposite perforation. No ulceration of intestine, in which was found a single female round-worm. Lungs œdematous.

3. A. A. A—, male, æt. 27. Old disease of left hip, with fæcal sinuses. Severe pain in abdomen 4 days. Admitted *in extremis*. Death in 3 hours. P.M.—General septic peritonitis due to appendix, which was perforated in two places close to free extremity. There were two necrotic perforations, one at either end of a fæcal concretion. Appendix lay transversely towards the promontory. Much matting of intestines from old pelvic abscess due to hip disease. Sinus communicated with the sigmoid flexure. Advanced lardaceous disease of liver and kidneys.

4. A. M—, female, æt. 24. Aborted 5 weeks previously. 14 days later swelling developed in right iliac fossa. Admitted into Adelaide. Uterine appendages found involved in a mass in right iliac fossa, which was as large as an orange and hard. Resonant above but dull below. Median cœliotomy. Mass brought into view, when it appeared to be due to appendix mischief. Abdomen closed. Sinus resulted. Twenty-five days later abscess opened in inguinal region; pus evacuated, which was fæcal. Median sinus explored and scraped. Patient progressed well until 26th day after second operation, when temperature rose to 104° F., and great pain experienced in the belly; this subsided. On 46th day after second operation patient was again attacked by severe pain in the right loin; the features became pinched and temperature raised. Cœliotomy through

outer border of right rectus on level with umbilicus; pus found; local irrigation. Death in few hours on 51st day after second operation. No P.M.

*Chronic appendicitis.*—Males 6, female 1. C. 6, D. 1. Number of previous attacks: 1 in 2 cases, 2 in 2 cases, 5 in 2 cases, multiple in 1 case.

*Treatment.*—Removal of appendix in all. Iliac incision in 5; semilunar line in 1; Kocher's in 1. Different direction for different layers in 2. Rectus divided in 1; sutured in layers 4. Appendix amputated by cuff method in all.

*Fatal case.*—A. B—, male, æt. 26. Admitted for removal of appendix in quiescent interval after first attack. Slight tenderness and resistance in right iliac fossa. Cœliotomy in right iliac fossa by spanning method. Appendix found behind cæcum; adhesions not dense. Flakes of lymph found on intestines. Perforation found about 1 inch from base. Amputation by circular peritoneal flap, which was inverted into cæcum. Abdomen sutured in layers. Great restlessness after operation. Several injections of morphia required. Vomiting 3 days after operation. Hæmorrhage under skin. Blood evacuated under ether, and skin again stitched up. Pulse weak and rapid. Slight tenderness; no distension. Temperature raised. Collapse and death on 5th day from operation. P.M.—General septic peritonitis. Cæcum infiltrated with blood. Union about stump of appendix perfect.

*Inflammatory swelling under liver.*—S. T—, female, æt. 28. Sudden attack of pain in abdomen 33 days previously, followed by vomiting. Confined to bed and treated with opium. Temperature was apparently raised. One week previous to admission was jaundiced, but this has subsided till scarcely noticeable. On admission features pinched. Slight tinge of jaundice. Slight distension of abdomen. Whole of right flank from inner third of Poupart's ligament to ziphisternum dull and exquisitely tender. Some indication of colon in the apex. Under anæsthetic iliac fossa was found to be free from any tumour. Urine: no albumen or sugar; deposit of urates. Incision into abdomen in flank released clear fluid. Incision in semilunar line. Hard tumour felt reaching up under liver and down into flank, about halfway between pelvis and iliac crests. Gall-bladder free. Abdomen closed. Temperature remained high for some time, but then subsided. Discharged cured on 38th day.

*Cholelithiasis.*—Females 3. C. 1, R. 1, U. 1. Jaundice in 1; enlarged liver without jaundice 1.

E. S—, female, æt. 64. Biliary colic 14 days. Dilation of gall-bladder 3 weeks. Cœliotomy. Gall-bladder incised; bile evacuated; one large and several small stones abstracted. Fundus stitched to skin. Bile-stained discharge when patient left hospital on 33rd day. Bile in fæces all through; none in urine; skin not stained.

*Biliary fistula.*—C. M—, female, æt. 40. Cholelithotomy and drainage of gall-bladder 11 months previously. Sinus on and off since that date. Cœliotomy; many adhesions; general abdominal cavity not opened. Gall-bladder and colon (hepatic flexure) joined with small Murphy's button. Fæcal fistula for some time, but patient left with the sinus discharging bile as before. Button passed 13 days after operation.

*Abscess about gall-bladder.*—See Pyæmia (Special Table).

J. B—, male, æt. 33. Illness commenced 18 months ago with severe griping



pain in stomach accompanied with severe vomiting. Pains soon ceased, but vomiting became persistent, and occurred as a rule in the evening after tea, when a sensation of fulness and discomfort led to evacuation of contents of stomach in such quantities that the patient said he brought up "half a bucket." Flesh has also been lost for the last 18 months. Bowels confined. On admission abdomen hard and flat. Gurgling and splashing well heard on pressing the abdomen, which sounds are also produced on moving the patient from side to side. Stomach when full was easily visible, producing a prominence that reached 2 inches to the right and below the umbilicus. Median cœliotomy on 36th day. Pyloric end of stomach and first portion of duodenum dragged out of the wound. Stomach covered with large veins. Tight stricture of pylorus found which gave the impression of a piece of whipcord tied round the viscus. Stricture appeared simple. Longitudinal incision made into stomach 2 inches from pylorus. Tight stricture found at pylorus. Bullet probe, then one finger, and then two fingers were successively passed through stricture. Two more fingers were then introduced, and the stricture still further dilated. A second stricture was then found, that was likewise dilated to admit two fingers. Wound in stomach closed with continuous blanket stitch, and over this sixteen Lembert silk sutures. Abdomen closed. Stomach irrigated as patient was sick during the suturing. Good deal of collapse during the operation. Rectal feeding for 24 hours alone, after which small quantities of liquid food were given with stimulant at frequent intervals. Morphia was also required to keep patient still and relieve pain. Hiccough troublesome. Patient became gradually weaker, and died on 7th day after operation. P.M.—Peritoneum healthy. Transverse colon lay  $\frac{1}{2}$  inch below umbilicus. Stomach was large, but not larger than seen in health; its greatest length when flattened out was 9 inches from right to left, and its greatest breadth 4 inches. On anterior surface was an incision  $1\frac{1}{2}$  inches long and somewhat curved, reaching almost up to the pylorus. Wound firmly sutured and healed. A fold of peritoneum was found running from the tip of the gall-bladder down on to the anterior surface of the duodenum, from which point it extended to and was lost in the omentum; anterior edge of the fold was free and thin. On raising the liver the gall-bladder was bent on itself, with the concavity downwards, while the duodenum was pulled up, though when the parts were in natural position it was hard to see how any obstruction was produced. On inserting the finger into the duodenum and raising the liver a constriction of the duodenum was at once apparent; but it appeared possible that when the stomach was pulled down by its contents obstruction could have taken place. No sign of pylorus was found, and this end of the stomach was  $2\frac{1}{4}$  inches in internal circumference. No disease of stomach wall.

#### GENITO-URINARY SYSTEM.

*Stricture.*—Males 54. C. 35, R. 12, U. 1, D. 6. History of trauma in 8.

*Situation.*—Penile 8, penile and bulbous 6, bulbous 28, bulbous and membranous 21, membranous 6, not stated 5.

*Complications.*—Perineal fistula 10, cystitis 2, extravasation of urine 2, retention 15, abscess 4, enlarged prostate 1, ruptured abdominal aneurysm.



*Treatment.*—Incision 2, incision of abscess 4, external urethrotomy 7, excision of stricture 1, Cock's perineal puncture 3, aspiration 1, supra-pubic puncture 2, circumcision, internal urethrotomy 1.

A. S—, male, æt. 47. Gonorrhœa 20 years previously, at which time he fell astride a pole and passed some blood, but the history of ruptured urethra is doubtful, as no operation was performed. Admitted with penile and spongy stricture. Urethra opened in front of stricture, which was 1 inch long; stricture excised; ends of urethra joined with kangaroo tendon. Urethra admitted a No. 28 French sound. Skin approximated with horsehair. Urine passed through penis for one day, when some extravasation occurred necessitating opening up of wound. Urine passed through wound and penis until 26th day after operation, when wound finally closed.

*Fatal cases.*

1. H. A—, male, æt. 29. Stricture 6 months. Dilated and discharged with catheter. Readmitted in 8 days with acute cystitis. Urine foul, and contained much blood. Tenderness over both kidneys. Irrigation of bladder. Temperature raised at first, but subsequently fell to normal and subnormal. Death on 10th day after readmission. P.M.—Hypertrophied and sacculated bladder; acute cystitis; congestion of lungs.

2. G. N—, male, æt. 72. Stricture 30 years. Frequency of micturition with pain for 6 weeks. Bulbous stricture. Bladder irrigated. Patient's condition became suddenly worse on 6th day. No pain complained of. Fluid in peritoneum. Tenderness in left flank, where dulness was noticed. Death on 6th day. P.M.—Small aneurysm  $2\frac{1}{2}$  inches above bifurcation of aorta, which had ruptured and formed a cavity in retro-peritoneal tissue the size of a Tangerine orange. This in its turn had again ruptured, and effused blood round left kidney. Aorta in abdomen grossly diseased. Pelves of kidneys dilated. Right kidney capsule unduly adherent. Bladder dilated and fasciculated.

3. R. S—, male, æt. 39. Stricture 14 years. Retention 3 days. Perineal puncture. Dilatation with steel sounds. High fever. Suppression of urine. P.M.—Cystitis; acute suppurative nephritis.

4. J. M—, male, æt. 66. Stricture many years. Retention 24 hours. Admitted with extravasation of urine. Multiple incisions. Death on 13th day. No P.M.

5. T. F—, male, æt. 61. Stricture 25 years; perineal fistula 12 months. External urethrotomy on 6th day, followed later by steel sounds. Bladder irrigated. Fistulous opening did not heal. Plastic on 79th day to close urethra; partial success. Urine acid, but contained pus. Patient evidently wasting. Gradual supervention of coma. Death on 169th day, the temperature being normal for some weeks. P.M.—Small bowel adherent to cyst-like body behind pubes of bladder, as was also the sigmoid flexure. This cyst was a chronic abscess, apparently arising from prostate and extending up behind pubes, and raising peritoneum. Capacity was that of 10 ounces. Bladder small and thick-walled. Mucous membrane black. Early hydronephrosis of both kidneys; ureters dilated. Liver and spleen lardaceous.

6. W. J—, male, æt. 65. Stricture 25 years. Retention with swelling of penis and scrotum 3 days. Incisions into scrotum and peritoneum; cavity containing serum found behind stricture. Death from exhaustion on 4th day.

P.M.—Lungs œdematous. Liver pale and fatty. Gall-bladder contained over 69 faceted stones. Kidneys congested. Pus in bladder.

*Enlarged prostate.*—Retention 14; cystitis 2; hæmaturia 1.

*Treatment.*—Supra-pubic cystotomy 7; partial prostatectomy with forceps 1; castration 1.

E. H—, male, æt. 62. Enlarged prostate 3 years. Retention 4 days. Supra-pubic drainage. Double castration on 42nd day. One week after operation patient developed delusions, and declared he had found scheme for making money, and made the nurse offers of marriage. Bromide and chloral given. Mental symptoms passed away in about 10 days. Small amount of urine passed naturally for the first time on 16th day after operation, and this condition improved up to the time of discharge, except for a few days, when not so much urine was passed, due apparently to some swelling in prostate. Discharged on 139th day, all urine being passed through penis.

*Fatal cases.*

1. H. G—, æt. 70. Admitted with diarrhœa. Supra-pubic drainage. Fever. Suppression of urine. Death on 21st day. P.M.—Broncho-pneumonia. Kidneys normal except for few cysts.

2. T. J—, male, æt. 60. Retention. Supra-pubic drain. Hæmorrhage from bladder. Bronchitis. Thrombosis of veins of right leg. Exploration of bladder. Soft pedunculated growth felt on prostate. Death. No P.M.

3. C. M—, male, æt. 67. Retention. Soft catheter passed (No. 10). Urine acid. Diarrhœa; vomiting; collapse. Death on 13th day. No P.M.

4. J. A—, male, æt. 73. Difficulty of micturition 11 years; increased lately until complete retention supervened. On admission bladder distended. Passage of catheter impossible; supra-pubic drainage. Urine alkaline. Hæmorrhage from bladder. Some delirium. Bedsore. Temperature raised. Death on 41st day. P.M.—Lower lobe of right lung in state of red hepatisation; other portions of lung congested and œdematous; right pleura obliterated. No macroscopic change in kidneys. Mucous membrane of bladder swollen, reddened, and mammillated. Prostate uniformly hypertrophied to the size of an orange.

5. J. R—, male, æt. 87. Admitted with difficulty and pain in passing water. Bladder contained almost pure pus. Irrigation with quinine sulphate. Succession of rigors. Death on 10th day. P.M.—Lateral lobes of prostate much enlarged, while the middle lobe was rather less so. All signs of acute cystitis. Diverticula around entrance of each ureter, which were dilated to the size of a finger. Kidneys were moderately dilated. Cortex narrow, with spots of intense hyperæmia, in the centre of which were gaping foci of commencing abscesses. Pneumonic consolidation and collapse of lungs. Mitral incompetence.

6. G. C—, male, æt. 57. Admitted with enlarged prostate. Urine foul. High temperatures. Death. P.M.—Bladder dilated. Prostate size of man's fist, and contained small abscess. Severe cystitis and pyelitis. Obsolete tubercle at apices of lungs.

*Vesical calculus.*

1. F. H—, male, æt. 10. Duration 2½ years. Previous supra-pubic cystotomy for stone 33 months ago. Supra-pubic cystotomy; two stones, oxalate and uric acid. Discharged on 24th day.

2. G. H—, male, æt. 7. Duration for years. Lithotrity; oxalate calculus. Discharged on 19th day.

3. J. G—, male, æt. 4. Duration 3 months. Discharged unrelieved. Stone not felt in hospital.

4. J. G—. Readmitted. Supra-pubic lithotomy; pyramidal calculus, probably uric acid. Discharged on 20th day.

5. V. L—, male, æt. 7. Lithotrity 2 years previously. Duration 1 week. Lithotrity; triple phosphates on uric acid and oxalates; weight 32 grains when dry. Discharged on 22nd day.

6. J. C—, male, æt. 58. Three previous lithotrities since June, 1893. Duration 7 months. Lithotrity; stone, uric acid nucleus; phosphates; weight = 160 grains. Discharged on 23rd day.

7. F. H—, male, æt. 14. Duration 17 months. Lithotrity; stone  $\frac{3}{4}$  inch in diameter; phosphates. Discharged on 31st day.

8. G. T—, male, æt. 64. Two previous lithotrities since 2 years, when the stones were phosphates and oxalates respectively. Duration 3 months. Supra-pubic cystotomy; phosphatic stone, size of pigeon's egg. Small portion of mid-lobe of prostate removed with forceps. Micturition, which was spontaneous before operation, not affected. Discharged on 62nd day.

9. E. B—, female. Duration 14 weeks. Small stone extracted through urethra. Nucleus of red wool fibre coated with triple phosphates.

Drainage was employed in all supra-pubic cystotomies.

*Renal calculus.*—Females 2. C. 2. Lumbar nephrolithotomy in both. Cortical stone as well as pelvic in one.

*Renal calculus and pyonephrosis.*—Females 2. C. 1, D. 1.

E. W—, female, æt. 17. Severe renal colic 4 days previously. Definite and extremely tender swelling in right lumbar region. Lumbar nephrolithotomy; pus and a stone 1 inch  $\times$   $\frac{1}{2}$  inch evacuated; drainage. Urine discharged through wound till 51st day after operation, when cœliotomy was performed and ureter examined; nothing found. 14 days later a body the size of a hazel-nut and grey in colour passed *per urethram*. All urine at once discharged through urethra. Discharged on 76th day from admission with wounds healed.

*Fatal case.*—M. A. K—, female, æt. 52. Attacks of renal colic for 1 year. No blood in urine, which was thick and offensive. Pain was confined to the right side until lately, when pain appeared in left loin. Rounded tumour in left loin, reaching from 9th costal cartilage to 3 inches below and to the right of umbilicus, and from there to 1 inch above iliac crest. Tumour was moveable but immobile on respiration; some resistance in right loin. Few pus cells in urine with  $\frac{1}{2}$  albumen. Bowel inflated *per rectum*, when a vertical band of resonance appeared over front of tumour. Attack of renal colic on 29th day with vomiting, followed by rigor on 30th day. 31st day.—Amount of urea diminishing. Nephrolithotomy by left lumbar incision; 1 pint of turbid fluid evacuated with two calculi, one small and hard, the other soft and mortary. Fair amount of kidney substance in wall of cyst. Wall stitched to skin. Fluid contained pus cells, albumen  $\frac{1}{2}$ , few red corpuscles, and large amount of cholesterine. On 4th day after operation amount of urine and urea, which had increased after operation,



began to diminish, and the patient to become apathetic, until on the 7th day only 16 ounces of urine were passed, and this smoky and alkaline. Right lumbar nephrotomy performed, and pelvis of kidney found filled with mortary material. Patient never rallied from operation, and soon died. Greatest amount of urea in 24 hours = 273 grains, and least = 120 grains. P.M.—Left kidney converted into smooth-walled fibrous sac; no ulceration of surface; ureter normal in lower two thirds and patent. Right kidney showed dilated pelvis filled with mortary substance; cortex narrowed and fibrous, and showed an abscess cavity that had been opened at operation; mucous membrane was here also smooth; ureter normal. Bladder hypertrophied and small. Mucous membrane congested in patches, and showed varicose veins of considerable size. Liver: early nutmeg. Emphysema of lungs. Cavities of heart contained yellow gelatinous clot.

*Hydronephrosis*.—Males 2, females 2. C. 3, R. 1. Readmission 1. Nephrectomy 2. Nephrotomy twice in female case, the fluid having re-collected after first operation.

*Moveable kidney*.—Females 3. C. 3. Double in 2. Lumbar nephrorrhaphy in all, but only on one side, namely, left twice and right once.

*Nephralgia*.—Males 7, females 2. C. 6, R. 3. Two female cases were distinctly hysterical. Lumbar exploration of kidney in 3, one being in an hysterical woman.

A. S.—, male, æt. 49. History of a rope being violently tightened round body 25 years previously. At exploration a fibrous band was found passed across the kidney and indenting it; this was divided and the wound closed, no trace of a calculus being found.

*Tubal nephritis*.—Wm. S.—, male, æt. 25. Three weeks previously increased frequency of micturition, while 1 week later blood appeared in urine, and dysuria was noted. No œdema of skin noticed at any time. On admission patient was well nourished, and nothing abnormal noted about appearance. Urine 1030 sp. gr., neutral; blood, albumen, and pus present; corpuscles (red) seen in great abundance under microscope. Examination under ether: nothing abnormal found in bladder or prostate. Urine on 21st day: acid, 1024 sp. gr.; cloud of albumen on boiling; leucocytes under microscope. Supra-pubic cystotomy. Bladder normal. Drainage. Suppression of urine. Death on 23rd day. P.M.—Submucous hæmorrhages into bladder. Kidneys enlarged and engorged with blood; capsules stripped easily; microscopically there was tubal nephritis, most intense in convoluted tubules. Lungs congested and œdematous. A clove was found tightly fixed in tip of appendix vermiformis, but mucous membrane was ulcerated where it was in contact with it.

*Hydrocele of tunica vaginalis*.—Males 6. C. 6. Tapped 1; partial excision and drainage 3; incised and drained 2.

*Undescended testis*.—Double 7, right 2, left 8. Inflamed 1. Operation not advised 3; testis not found 2; testis excised 2; testis brought outside external ring 1; sutured into scrotum 11; testis inverted 5; pillars sutured 5.

*Syphilitic testis*.—Gummatous 4; congenital 1. Castration 2.



*Tuberculous testis*.—Males 6. C. 2, R. 2, U. 2. Castration in 3; vas involved where cut in 1; scraping of tuberculous epididymis 1; prostate involved 1.

*Paget's disease of nipple*.—E. S.—, female, æt. 50. Duration 3 years. Commenced as small pimple that gradually spread. Nipple represented by red eczematous ulcer. Some thickening felt in front below ulcer. Amputation of breast. Glands in axilla not removed.

*Tuberculous abscess of breast*.—Females 3. C. 2, R. 1. Amputation 1; incision 1.

*Gummata of breast*.—Females 3. C. 3. Readmission 2.

A. W.—, female, æt. 18. History of caries of sternum. Shoulder and sternum present white scars. Admitted three times with what appeared undoubted tuberculous abscesses and sinuses of both breasts, which resulted in the right breast being removed. No histological evidence of tubercle could be obtained from the specimens removed, in spite of repeated examination. Ultimately yielded to Pot. Iod., and healed well after patient left.

## AUDITORY SYSTEM.

*Thrombosis of cavernous sinus*.—M. G.—, female, æt. 15 months. Drowsiness and swelling behind right ear, and discharge from meatus noticed 24 days previously. Admitted with mastoid abscess, otitis media suppurativa, and a temperature of 105° F. Mastoid antrum opened and drained. Sinus found healthy. Following morning proptosis of right eye noticed, temperature remaining high; pupils equal and react to light; patient since comatose; tepid sponging. Temperature fell somewhat only to rise again, while proptosis became more marked. Temperature reached 107.4°. Coma deepened, and child died on third day after admission. P.M.—Middle fossa covered with clear lymph. Dilated thrombosed vein found running from apex of petrous bone to the right sphenoidal fissure. Right cavernous sinus filled with purulent clot; right orbit healthy; tegmen tympani wanting; extra-dural abscess, which was well drained by operation. Patches of collapse in both lungs; right lateral sinus normal.

*Cerebellar abscess*.—W. W.—, male, æt. 9. Discharge from right ear when 3 years old, not due to any specific fever. Discharge lasted 2 years. Three weeks before admission pain in right side of head, while 1 week before admission discharge from ear recommenced and vomiting occurred after food; bowels constipated; no shivering. On admission intense pain in head, causing patient to shriek at times. Condition gradually got worse until patient became semi-comatose, and was only aroused when spoken to; no paralysis; no affection of eyes; some retraction of head; occasionally attacks of cyanosis; pulse 60; tenderness over right mastoid; temperature subnormal; ear syringed with boracic; vomiting; hearing only on contact in right ear. 7th day.—Mastoid antrum opened and offensive pus evacuated; tympanic cavity was not put into free communication with antrum; cerebellum exposed; membranes bulged;

slight pulsation; abscess found in anterior part of right lateral lobe; three drachms of pus evacuated; abscess at depth of  $1\frac{1}{2}$  inches from surface of cerebellum; drainage with silver tube. 8th day.—Slight optic neuritis; pulse 76; paroxysms of pain continued; mental condition improved. 10th day.—Rubber tube substituted for silver one; pulse 90; knee-jerks if anything somewhat exaggerated; temperature varies occasionally, reaching  $102^{\circ}$  F. 12th day.—Vomiting after food; general condition improved, and patient answered questions by nodding or shaking head, or even by verbal answer, and played with boys; no headache. 14th day.—Tube withdrawn and replaced; discharge from cerebellar abscess decreasing; optic discs somewhat blurred; veins rather full. 18th day.—Tube removed; patient well enough to take interest in objects about him; pulse 108, regular; but little discharge from antrum, ear, or abscess. 22nd day.—Condition not so good; pulse 116; temp.  $100^{\circ}$  F.; vomiting of greenish gelatinous material; watch heard only on contact on right side; patellar reflex present and brisk on right side; no patella or ankle clonus. 23rd day.—Slight improvement. 25th day.—Paroxysm of pain returned; vomiting again present; coma supervened; exploration of right lobe of cerebellum; nothing found; paroxysms of pain became aggravated; vomiting continued; temperature rose to  $105^{\circ}$  F.; general rigidity of body with tremors; cyanosis of face; deepening of coma; stertorous breathing. Death on 26th day. No ocular symptoms with exception of optic neuritis and no paralysis were observed. P.M.—Small trephine hole behind right ear leading into the middle ear; this chamber was filled with purple granulations in which the malleus was found; no membrana tympani or other vesicles found. There was no sign of disease about lateral sinus, which was healthy, and contained post-mortem clot. Half-inch trephine hole over cerebellum led into a linear abscess cavity, which contained a little blood-stained pus, but was well drained, and abutted on the surface at both ends, the pia mater being discoloured at the unopened end. The abscess formed a chord of a circle, cutting off the outer and posterior part of the lateral lobe of the cerebellum. Just internal to this and parallel to it was a second abscess cavity, which was elongated, but not so long as the first-described cavity. This abscess was unopened, and contained thick milky green pus. Its walls were thick and fibrous, indicating an age of probably many months; no meningitis; no excess of fluid in ventricles; no signs of pyæmia or tubercle anywhere.

## SKIN AND SUBCUTANEOUS TISSUES.

### *Cellulitis.*

1. W. B.—, male, æt. 21. Barman, cellulitis of neck. Primary sore 5 months. Treated some time for secondary syphilis, but had lately omitted treatment. Again treated for sore throat 7 days before admission, with anti-syphilitic remedies. On day of admission, when patient came up in the out-patient department, complaining that he had brought up blood, an inflammatory swelling was noticed at angle of left inferior maxilla, which projected in pharynx around the tonsil. In the evening of the day of admission about  $1\frac{1}{2}$  pints of blood was brought up, and lungs gave crepitation in every situation. No alteration in swelling of neck. Early in the ensuing morning patient had

another slight attack of hæmorrhage, followed by death. No cause was found for the bleeding. P.M.—Tissues about the pharynx infiltrated with blood, most marked on the left side, where there was a gelatinous clot in the tissues mixed with evidences of inflammatory change, but no definite pus. At the base of the cranium the internal carotid was dilated for  $\frac{1}{2}$  inch, where its wall was rough and unelastic, and showed a large perforation where it had sloughed. No signs of ulcerative endocarditis. Course by which the blood entered pharynx was not found. Lungs normal, except that passages were full of blood. Mediastinal tissues emphysematous. In left ventricle some septic-looking clot. Muscles pale and flaccid. Subpericardial hæmorrhages. Innumerable subserous hæmorrhages in liver and spleen. Other organs healthy.

2. W. F.—, male, æt. 40. History of illness:—Patient, who was an in-patient dresser, had been dressing a very septic case of extravasation of urine, and 2 days before admission noticed sore throat. On admission there was much swelling of left tonsil, and considerable inflammation of fauces generally. Slight enlargement of glands at angle of jaw. Temperature about 100° F. Pus being apparently present, the tonsil was incised, but without much relief. On the day after admission the swelling increased and the tonsil was again incised, and this time more pus exuded. There was more general œdema of the tissues around the angle of the jaw. On 3rd day there was very great œdema of the side of the neck and over the parotid region, and considerable difficulty in breathing. Patient taken to theatre and the brawny tissues of the neck freely incised. There was, however, practically no escape of pus; but the tissue cut into had a sodden leaden appearance, and there were tracts of blackened sloughs in the subcutaneous tissue. During the operation patient stopped breathing, and tracheotomy and artificial respiration had to be resorted to. Chlorinated soda dressings were used. Five large incisions were made, one along the ramus of the lower jaw, and others parallel to this and above and below it. The wounds were dressed every 4 hours with chlorinated charcoal poultices, and had a most unhealthy and septic appearance for many days afterwards. Patient's general condition at first was fairly good, and he took food well. Brandy and champagne as stimulants freely administered. On 6th day the tissues of the cheek and forehead becoming swollen and fluctuating, an anæsthetic was again given, and several more incisions made under the eye and on the left temple, and again only very little pus escaped, the same septic unwholesome appearance of the tissues being evident. The charcoal dressings were still continued, and patient was becoming weaker. Relays of dressers came on duty night and day to render any assistance possible. Patient's temperature remained permanently low,—in fact, during the whole of his illness it scarcely ever exceeded 100°—usually 98° or 99° F. On 8th day patient again taken to theatre, and several incisions made above and behind ear where fluctuation had become evident. Drainage-tubes freely inserted in wounds. About this time the incision under the ramus of the jaw established a communication with the pharynx just behind the left tonsil, and in swallowing milk it was apt to escape in small quantities through this channel. The numerous wounds now began to show more signs of reaction, and very large sloughs were pulled away daily. Some fear was entertained lest the internal carotid should be sloughed into. Patient's general condition was good, though



grave fears were entertained owing to extremely diffuse area of septic sloughing exposed in the numerous wounds; and on 10th day it was noticed that there was proptosis of the left eye, with fixation of pupil and inability to distinguish objects clearly. Patient was again anaesthetised and incisions made into the orbit, and some pus exuded from the post-ocular tissue and drainage-tubes inserted. Considerable oedema of the optic disc found. 20th day, patient began to show signs of improvement. The wounds granulated healthily. No further symptoms due to the orbital influence developed, and his general condition improved. Appetite fairly good. He had during his illness taken large quantities of stimulants, and also had had turtle soup, and took beef tea and milk well. The communication between pharynx and neck granulated up. The wounds above the ear and right temple were the first to cicatrise. Considerable fixation of lower jaw was caused by cicatricial contraction. Patient was sent to the sea-side after leaving the hospital, and at the end of a month his general health was found to be nearly restored to normal. Movements of jaw still impaired. Paralysis of left facial nerve was evident in the lower facial muscles. Sight was not regained in left eye.

#### ARTICULAR SYSTEM.

*Wrist.*—Males 3, females 1. R. 5, D. 1. Readmission 1. History of tubercle in 1.

*Treatment.*—Exploration of joint by Langenbeck's incision, carpal bones found healthy, radius trephining but found healthy, the disease affecting the synovial sheaths. Langenbeck's excision 1, followed by amputation in lower third of forearm, and death from phthisis 1; arthrectomy by multiple incisions 2 in same case.

*Ankylosis of wrist.*—J. S—, male, æt. 32. Fall of 15 feet on to hands 9 years ago. Wrist sprained, treated with splints for 1 week. Patient did not work for 7 weeks, and then began to do light work. The arms became easily swollen and very painful. The wrists remained much the same except that for the last 5 years the wrists have been getting stiffer and weaker. Right wrist totally ankylosed, left almost so. Flexion of fingers poor, but extension good. Fingers cold, skin smooth. Right proximal row of carpal bones removed, when it was seen that the whole carpal bones were entirely united by bone to one another and to the radius. Hand put in splint and went out in splint.

*Elbow.*—*Tuberculous arthritis.*—Males 7, female 1. C. 2, R. 6. No history of tubercle. Excision 2; arthrectomy 1; sinuses scraped 4; plaster splint 1.

*Hip.*—*Tuberculous arthritis.*—Males 32, females 21. R. 50, U. 2, D. 1. History of tubercle in 12; trauma in 5; thrombosed femoral vein 1; albuminuria 2.

One case, M. H—, female, was admitted twice as tuberculosis of hip, and was again readmitted for disease of femur that appeared probably to be syphilitic.



*Treatment.*—Incision and suture of abscess 9; excision (anterior) 4, (posterior) 1; incision of abscess 5; arthrectomy 9; arthrotomy 2; scraping of sinus 6; tibia trephining 1; remainder by rest, extension, and Thomas's splint or plaster splint.

*Fatal case.*—A. G—, female, æt. 28. Tuberculous disease of hip 8 years. Previous operations. Admitted with pain in right groin and several sinuses. Urine showed half albumen. Sinuses explored; extensive disease found. Operation abandoned. Difficulty of breathing; slight rise of temperature. Death. P.M.—Extensive disease of acetabulum. Neck of femur disappeared. Psoas and iliacus muscles replaced by fibrous tissue and sinuses. Caries of pelvic tissue near sacro-iliac joint on right side, and also of posterior part of iliac crest. Recent acute pericarditis. Amyloid disease of kidneys. Three large tubercles on peritoneum of liver. Hypostatic congestion of lungs.

*Septic arthritis.*—Females 2. C. 1, R. 1. Previous acute necrosis of ilium from which joint was infected, 1; arthrectomy 1; excision 1.

*Ankylosis.*—Males 5; females 5. C. 6, R. 2, D. 1. History of tubercle in 9 gonorrhœal rheumatism of hip 1; abscess 1; sinus 1; fibrous 1.

*Treatment.*—Subtrochanteric osteotomy 8; incision of abscess 1; sinus scraped 1.

*Fatal case.*—E. T—, male, æt. 22. Ankylosis of hip (right) with inversion of foot. Subtrochanteric osteotomy. Profuse hæmorrhage. Incision in front of thigh. Vessels difficult to find on account of altered position of leg. Bleeding spot could not be found. Femoral artery tied. Wounds suppurated. Temperature fluctuated between 102·5° and 99·4° F. Diarrhœa. Albuminuria. Amputation below great trochanter. Death on second day after amputation, and 97th day from admission. P.M.—Bony ankylosis of hip. Sequestrum on inner side of femoral neck. Abscess about femoral neck ran into pelvis along psoas muscle. Liver pale, but gave no amyloid reaction. Spleen showed well-marked lardaceous change. Left pleura obliterated. Caseous bronchial gland on left side.

*Knee.*—*Tuberculous arthritis.*—Males 22, females 16. C. 10, R. 23, U. 4, D. 1. History of tubercle in 10; trauma in 11.

*Treatment.*—Excision 9; arthrectomy 4; arthrectomy followed by amputation 1; excision of tuberculous cyst followed by amputation of thigh 1; excision of abscess 1; incision of abscess 3; sinus scraped 3; excision of glands 1; amputation of thigh 2. Remainder by rest and splints.

*Fatal case.*—H. P—, male, æt. 35. Admitted for tuberculous knee of 1 year's history. No other complaint. Patient of swarthy complexion. Excision of knee on 19th day after admission. Bones wired. Mucous membrane of mouth was noticed to be pigmented by anæsthetist. Not much shock after operation, but patient complained of pain all through night, and died suddenly the following morning, the temperature rising to 103·2° F. P.M.—Skin of body bronzed. No isolated patches of pigment. From either angle of mouth the mucous membrane was pigmented for some distance in a posterior direction. Also isolated patches of pigment observed on the gums and in other places. Obsolete and active tubercle at both apices. In the neighbourhood of the supra-renal

bodies were two tumours the size of a Tangerine orange. There were also dense adhesions and much fibrous tissue in this situation. On section the supra-renal bodies were enlarged to the size of a walnut, and represented by a caseous mass. No involvement of solar plexus noted, nor was there any disease of spine. Other organs healthy.

*Charcot's disease.*—D. G—, female, æt. 37. Duration 3 years. Started as well of first one lower extremity and then the other. Swelling subsided, leaving the knees weak. Thus creaking and grating became evident, and about 2 years previously the left knee again became greatly distended, since when patient has been unable to walk. No history of ataxic symptoms before onset of affection of knees. Both joints (knees) disorganised. Great increase in femur on right side, and of tibia on left side. Lateral movements in both. Great laxity of ligaments. Some fluid in both joints. Right patella greatly enlarged. No ataxic symptoms in arms. Gastric crisis. Knee-jerks not obtainable owing to condition of knees. No affection of sensation except, perhaps, in fauces. Well-marked Argyll-Robertson phenomenon. No fundus changes. Discharged on 62nd day.

*Loose bodies.*—Males 5. C. 4, U. 1. History of trauma in 2; in one case a wrench of the knee and in the other a kick at a football which he missed. *Nature of bodies.*—Articular cartilage in 3, to one of which some bone was attached. In the fourth case there were two bodies, one small, which consisted of cancellous bone sheathed in cartilage, and found in a recess on the joint line of tibia; the other being free in the joint, and consisted of white, hard, dense bone. In this case there was a history of removal of loose body from the same knee 6 years previously.

*Synovitis (König's disease).*

*Fatal case.*—M. S—, female, æt. 18. Double flaccid synovitis of knees; little or no impairment of locomotion; no nodules felt in synovial membrane; no definite signs of congenital syphilis; right knee aspirated, but refilled; multiple chronic abscesses; caries of second rib; epiphysitis of right humerus with separation of epiphysis; diarrhœa untouched by treatment; joints subsided. Death from asthenia on 184th day. P.M.—Tuberculous bronchopneumonia; caseous mesenteric glands; caseous nodules in liver; no ulceration of intestines; great hypertrophy of synovial fringes in knee-joints; no sign of caseation in the synovial membrane; some erosion of cartilages and exposure of bone apparently in those places where the fringes had overlapped the cartilages. There was no growing over the cartilages by granulation tissue.

*Ankylosis.*—Males 15, females 6. C. 8, R. 9, U. 8, D. 1. Osseous 12, fibrous 9, multiple 4. *Causation.*—Suppurative arthritis 8; tuberculous arthritis 6; traumatic 2; gonorrhœal arthritis 1; multiple arthritis (nature ?) 4. *Treatment.*—Osteotomy of tibia 1; osteotomy of femur 4; V-shaped excision 4; metatarsal phalangeal excision 1; passive movement 2; lateral pons 2; extension 2.

*Multiple ankylosis.*—G. P—, male, æt. 30. Ten years previously right wrist became swollen and painful. Treated with rest. Painful symptoms subsided,

but left joint stiff. The right knee, left elbow, right shoulder, and right metatarso-phalangeal joint became successively stiff in same manner. No history of syphilis. On admission every large joint of all limbs with exception of the hips are affected more or less, and the left elbow and right knee completely ankylosed by bone. Right knee strengthened by V-shaped excision, and right metatarso-phalangeal joint excised.

*Fatal case*.—See Pyæmia (Special Table).

*Ankle*.—*Tuberculous arthritis*.—Males 8, females 10. History of tubercle 3; phthisis 1; arthrectomy by anterior incision 4; multiple incision 2; scraping sinus 2; scraping tarsus 2; amputation of leg 1; Syme's amputation 1; rest and plaster splint 4.

## SUMMARY OF INJURIES.

### GENERAL INJURIES.

*Burns.*—Males 32, females 31. C. 38, D. 25.

*Causation.*—Turpentine 1; paraffin oil 2; lamp explosion 6; spirit lamp explosion 1; gas explosion 3; sulphuric acid 1; boiling oil 1; fireworks 1; carbolic acid 1; hot iron 1; house on fire 1; fall into fire 3; remainder through ignition of clothing.

*Treatment.*—Boracic bath 18; Ung. Boracici 14; Ung. Eucalypti 1; vaseline 1; carron oil 1; remainder hot lotions; grafted 3; amputation of finger 1; oxygen treatment 2.

*Fatal cases*—

*Under 24 hours.*—Males: 3½, 5, 8, 83 years. Females: 2, 3, 4 (2 cases), 5, 5½, 14, 19, 43 years.

*Over 24 hours.*—Males: 2, 3, 4, 19, 40, 52, 57 years. Females: 3, 4, 5, 6, 48 years.

Obstinate vomiting 2; diarrhœa 1; exhaustion 1; pneumonia 1.

*Scalds.*—Males 24, females 20. C. 42, D. 2.

*Causation.*—Hot watery fluids in all. Scald of pharynx 4; whooping-cough 1; broncho-pneumonia 2.

*Treatment.*—Boracic bath 4; Lot. Sodæ Chlor. 1; Lot. Zinci Chloridi c Morphinâ 1; Lot. Zinci Sulphatis; remainder by Ung. or Lot. Acidi Borici; grafting 1; intubation 1.

*Fatal cases.*—Females, æt. 3 and 3½ years. Broncho-pneumonia 1. Admitted on third day 1, with scald in foul state.

### LOCAL INJURIES.

#### HEAD.

*Scalp wounds.*—Males 21, females 8. C. 28. Suppurating 5; paresis of leg (old) 1; bone exposed 2.

*Fatal case.*—Rupture of lateral sinus.—C. G—, male, æt. 24. Fall



downstairs. Died soon after admission. P.M.—Hæmatoma to right of occiput. Skull unfractured. Whole left hemisphere of cerebrum covered by blood-clot to the depth of a quarter of an inch, which lay under unruptured dura. Hæmorrhage arose from small rupture of lateral sinus. Left frontal lobe and apex of left temporo-sphenoidal is extensively bruised and lacerated. Several punctate hæmorrhages in the pons. All the lesions from their situation were produced by the fall on back of head. Lungs, kidneys, and spleen were much congested, the first being particularly so, and suggested infarction.

*Concussion*.—Males 64, females 20. C. 83, R. 1.

*Complications*.—Scalp wounds 10; contusions 12; headache 2; cerebral irritation 4; strabismus 1; twitching of arm 1, mouth 1; conjugate deviation of eyes 1; loss of memory 1; delirium 2, one of whom never regained his mental equilibrium and was discharged to infirmary.

*Simple fractures of vault*.—Males 2, females 1. C. 2, D. 1.

*Fatal cases*—

1. B. M. A—, female, æt. 3½. Run over. Died a few hours after admission. P.M.—Swelling and ecchymosis of forehead. Simple fracture of frontal bone extending across the whole width just above the external angular process, and entering the parietal bones on either side. Hæmorrhage between dura and bone. Bruising and contusion of both frontal lobes.

2. B. A. A—, female, æt. 3½. Run over by hansom cab. Admitted unconscious; bleeding from ear; hæmatoma in left temporal region; convulsive twitchings of left side of face. Death. P.M.—Horizontal fracture starting from above left eye to a point above the ear; also another fracture parallel to this one passing forwards from the external auditory meatus.

*Compound fractures of vertex*.—Males 6. C. 5, D. 1. Five cases linear fracture, who all did well.

*Fatal case*.—Tetanus hydrophobicus see (Special Table III).

*Compound depressed fracture of vault*.—Males 3, females 3. C. 4.

1. C. E. M—, male, æt. 8. Fall of 15 feet on to stone floor. Admitted unconscious; compound depressed fracture of frontal bone; extensive fracture; depression raised; progress good. Discharged on 18th day.

2. H. M—, male, æt. 24. Head came in contact with iron bridge while patient was standing on tender of engine travelling at 15 miles an hour. Admitted semi-comatose. Large frontal scalp wound with great splintering of frontal bone. Fragments raised and removed. Frontal sinuses opened so that fluid ran into nose. Dura mater uninjured. Wound well cleaned. Bone attached to periosteum replaced. A fracture was seen to run down towards the base of skull through frontal sinus. Wound healed by first intention. Consciousness regained on 4th day. Discharged cured on 35th day.

3. E. K—, male, æt. 32. Kicked on the head by a horse. Patient perfectly conscious. Compound diagonal fracture of posterior part of right parietal bone. Skull trephined; depression raised; wound closed. No symptoms. Discharged cured on 21st day.

4. E. L—, female, æt. 21. History doubtful. Gun said to have been discharged close to patient's head. Scalp torn off for space of 2 inches over

frontal and right parietal bones. Edges blackened with powder grains. Two fissure fractures running one on either side of coronal suture, the bone between being slightly depressed. Patient drowsy. Parietal bone trephined; opening enlarged; depressed bone raised; scalp cleaned and sutured, leaving a patch of bone denuded of periosteum. Progress good. No further symptom. Some exfoliation of bone. Discharged on 60th day.

*Punctured fracture of vertex.*—F. S—, male, æt. 2. Fall on to nail, which entered back of vertex for space of  $1\frac{1}{4}$ —2 inches. Nail extracted. Patient conscious. No symptoms. Probe entered for distance of 2 inches. Flap of scalp raised; piece of bone in left parietal bone removed with  $\frac{1}{2}$ -inch trephine, so as to include punctured wound, and aperture enlarged; some splinters of bone removed, and also some hairs; wound sutured. Progress good. Discharged on 14th day.

*Fractured base.*—Males 15, female 1. C. 12, R. 1, D. 3. Anterior fossa 1, middle fossa 10, posterior fossa 4, all fossæ 1. Facial paralysis 1; cerebro-spinal fluid from ear 2.

*Fatal cases.*

1. C. B—, male, æt. 42. Admitted and died in a few hours. Much hæmorrhage from right ear. P.M.—1st, 3rd, and 4th ribs fractured near cartilages. Fractures commenced in anterior fossa in both orbital plates, and ran back to pituitary fossa; from this they passed out into middle fossa in front of and parallel to the petrous bones on both sides. From fracture in right middle fossa a fracture passed back into the posterior fossa and ended just above the groove for lateral sinus, while a branch entered the foramen magnum. No laceration of brain or membranes except a few vessels in the pia mater.

2. H. C—, male, æt. 5. Run over. Died in few hours. Fractures ran from foramen magnum to the left petrous bone, and on the right side to the parietal bone. Right lobe of cerebellum showed bruising and small hæmorrhages. Spleen torn through its centre for about half its extent. Blood in peritoneum in left flank. Bruising of right lower lobe of lung.

3. E. G—, male, æt. 55. Fell from scaffold 6 feet. Admitted in a comatose condition. Pupil stationary. Pulse 48. Died few minutes after admission. P.M.—Fracture in left posterior fossa running in antero-posterior direction, parallel to mid-line and 2 inches from it, to end in the foramen lacerum posticum. Intra-dural hæmorrhage about cerebellum, and also over right frontal convolutions, which were somewhat bruised. Cerebral vessels atheromatous.

*Fractured base and vertex.*

*Fatal cases.*

1. H. S—, male, æt. 42. Fall from scaffold. Death soon after admission. P.M.—Scalp intact. Fracture started just left of external occipital protuberance, and quickly bifurcated. The upper limb passed up and outwards, while the lower passed obliquely down to the base. These two fractures were united by several vertical fissures. Extensive meningeal hæmorrhage over the supra-marginal angular gyri, and the anterior portion of occipital lobe on the left side. Blood effused was  $\frac{1}{4}$  inch in thickness, and under it the cortex showed superficial lacerations. There also existed some ecchymosis over right frontal lobes, and slight effusion of blood over the base. All ventricles were uniformly

dilated, and contained in all about  $\frac{1}{2}$  pint of clear fluid; this was evidently due to old-standing hydrocephalus with thickened ependyma. Left kidney atrophied and lobulated with numerous cysts, and weighed only 2 ounces; right kidney hypertrophied and somewhat dilated.

2. C. H—, male, *æt.* 5. Run over the head and chest by brewer's van. Admitted unconscious and suffering from great shock. Large hematoma over left mastoid and left side of head. Lineal fracture felt extending up from right mastoid. Strychnine injected subcutaneously, but death followed in few hours without the return of consciousness. P.M.—Fracture ran from foramen magnum to base of left petrous bone; another fracture ran from right side of foramen magnum outwards, across the posterior fossa, and up into the parietal bone. Right side and hinder surface of right lobe of cerebellum showed superficial bruising. Spleen was torn half through above its centre;  $\frac{1}{2}$  pint of blood and clot in left flank. In lower lobe of right lung was an irregular hæmorrhage about the size of a hen's egg, without any obvious sign of rupture. No fracture of any other bone.

3. G. J. R—, male, *æt.* 54. Fall off omnibus roof. Was admitted unconscious, but soon regained senses to a certain extent. Had the fixed delusion that he was still collecting fares on the omnibus. Patient soon became noisy, and had to be restrained from getting out of bed. Sordes collected on the teeth and lips, and breath became horribly offensive. Temperature varied from 103° F. to 98° F. Towards the end coma supervened, and patient died in this state on 7th day. No paralysis developed. P.M.—Fracture started in middle fossa and soon bifurcated, the posterior limb passing backwards for 3 inches, while the anterior limb passed up and out across the inferior angle of left parietal bone, where it wounded the middle meningeal artery, and led to an extra-dural hæmorrhage; this was 3 $\frac{1}{2}$  inches from above down and  $\frac{3}{4}$  inch in thickness. Considerable laceration of right inferior temporo-sphenoidal convolution and under surface of left lobe of cerebellum. Blood effused on base of brain. Blood-stained fluid in ventricles of brain. Tubal change in kidneys. Liver fatty. Recent adhesions in right pleura. Early atheroma in aorta.

4. S. G—, male, *æt.* 32. Patient, while under influence of alcohol, pulled another man through a door, and then tripped up and fell on his back with the other man above him. Admitted comatose, with flaccid limbs and dilated pupil on left side. Some hæmorrhage from left ear. Died in a few hours. P.M.—Linear fracture started in posterior fossa on the left side, passed through apex of petrous bone, and gained the middle fossa, and then turned up into parietal bone. Roof of left tympanum fractured. Large extra-dural clot found, weighing 4 $\frac{1}{2}$  ounces, situated over the left ascending frontal and parietal convolutions. Extensive contusion of brain, especially in the two temporo-sphenoidal lobes; some bruising also in cerebellum. In fact, hardly any part of the brain was quite normal.

5. F. McC—, male, *æt.* 24. Fell down in street 4 days before admission. Cerebro-spinal fluid commenced to flow from right ear 3 days before admission. On following day patient had attacks of vomiting, and on day before admission began to yawn frequently, while on day of admission became unconscious. On admission, patient comatose. Pulse and breathing rapid. Temp. 102° F. No discharge from ear. On second day temperature reached 104° F.; tepid sponging. 5th day, temperature again rose to 104° F.,



pulse 120. Paresis of left external rectus. Pleuritic effusion at both bases. Retention of urine. Death on 4th day without recovery of consciousness. P.M.—No sign of external injury. Large extra-dural extravasation of blood occupying the region of middle meningeal. The superficial extent of clot was  $2\frac{1}{2}$  inches in all directions, and  $\frac{3}{4}$  inch deep. Clot was recent and semi-solid. Brain tissue compressed but not torn. Linear fracture commenced 1 inch behind the supra-orbital ridge, and extended back to the level of the right ear, and then turned down vertically into the middle fossa. Fracture of vertex involved inner table only in vertex. Posterior branch of right middle meningeal wounded at level of top of pinna. Opening in artery admitted a fine probe. Caseous nodules in upper lobes. Extreme apices were studded throughout with miliary tubercles. Lower lobes congested.

6. J. Y—, male, æt. 39. Said to have thrown himself from window of second story. Admitted in comatose condition, and died soon after admission. P.M.—Superficial abrasions of left thigh and knee. Scalp wound over left supra-orbital ridge, exposing bone. Lacerated wound beneath lower lip on left side. Hæmorrhages from left ear. Linear fracture of vertex passing from above left ear to terminate above left orbit. Base of anterior fossa splintered so that the fractures ran into the ethmoidal cells on both sides. Radiating fissures in middle fossa. Membranes intact. No laceration of brain. Some hæmorrhages into arachnoid over vertex posteriorly. Some blood-stained fluid at base. Fluid in ventricles also blood-stained. Lungs congested, some emphysema. Pyramids of kidneys unduly red.

*Compound depressed fracture of vertex and base.*

*Fatal case.*—N. R—, female, æt. 53. Fall from window. Admitted unconscious. Large scalp wound above left ear reaching to middle line. Large depressed fracture of parietal bone, the depression being deepest on the side furthest from mid-line, where the fracture involved inner table only. Trephine applied, but owing to the fracture involving inner table to a greater extent than the outer it was not until a large area of bone was removed that the depressed pigment could be taken out. Vein near longitudinal sinus bled and required ligature. Dura wounded at one point, and brain matter escaped through it. Wound closed. Patient sank and died in a few hours. P.M.—Bone removed measured  $2\frac{1}{2}$  inches in all directions. From anterior extremity a linear fracture extended in anterior fossa. Ethmoid completely disorganised. Fracture of left orbital plate. Slight laceration of dura over left frontal lobe on orbital aspect, where the cerebral substance had sustained laceration. Membranes infiltrated with blood throughout. Blood-stained fluid in ventricles. Some punctate hæmorrhages. Early atheroma of aortic pelvis and aorta. Lungs congested. Interstitial change in kidneys.

## INJURIES OF NECK, CHEST, ABDOMEN, SPINE, AND PELVIS.

*Incised wounds of throat.*—Males 6, females 3. C. 6, D. 3. Air-passages opened in thyro-hyoid space 4; crico-thyroid space 2. Suture in all. Tracheotomy 1; laryngotomy 1.



*Fatal cases.*

1. K. Z—, female, æt. 51. Influenza 6 weeks previously. Depression. Incised wound of throat 2 inches long, passing through the extreme upper portions of the thyroid cartilages, opening the thyro-hyoid space, and dividing the epiglottis. Epiglottis sutured, also lateral portions of thyroid cartilage. Tracheotomy. Patient extremely restless, and tried to pull tube out. No reaction in wound. Rectal and œsophageal feeding. Death from asthenia on 8th day. P.M.—Upper lobe of right lung adherent, and presented fibro-calcareous nodules in its substance, while the surface was puckered. Other organs healthy.

2. R. G—, female, æt. 21. Homicidal wound. Jagged incised wound, extending obliquely across thyro-hyoid space, being deeper on the left side, on which side it was slightly higher. Died in 24 hours. P.M.—Air-passages laid open through thyro-hyoid space. Epiglottis amputated. Great vessels uninjured. Hyoid bone broken subcutaneously on both sides. Œdema of glottis. Tracheotomy throughout 2nd, 3rd, and 4th rings of trachea. Incised wounds of left hand. Lower lobes of lungs solid, probably due to aspiration of blood. Uterus enlarged to size of Tangerine orange. Chorionic villi well marked. No fœtus found. Ovaries normal.

3. T. S—, male. Tetanus (see Special Table III).

*Fractured ribs.*—Males 9, females 3. C. 12.

*Complications.*—Bronchitis 2; emphysema 4; phthisis 1; hæmoptysis 1; hæmothorax 1; pneumothorax 1.

*Fractured spine.*—Males 7, females 1. C. 3, R. 3, U. 1, D. 1.

1. E. C—, female, æt. 42. Fell 20 feet on to side. Gap between the 11th and 12th dorsal spine. Some blunting of sensation in both lower extremities, but very indefinite; no loss of power; absence of knee-jerks; no affection of bladder and rectum. Sayre's jacket. No return of knee-jerks on 34th day. Discharged cured on 44th day.

2. W. D—, male, æt. 11. Fracture of a lower dorsal spinous process by direct violence. No nervous symptoms. Discharged cured on 27th day.

3. H. O—, male, æt. 43. Found on railway. Irregularity about third cervical spinous process. Sudden collapse and extremely shallow breathing, while pulse continued good, on two occasions soon after admission. Head fixed. Discharged cured on 30th day.

4. G. H—, male, æt. 30. Fall downstairs while intoxicated. Tenderness over sixth to seventh cervical spines. Complete paralysis of trunk and lower extremities. Breathing diaphragmatic. Some blunting of sensation below fifth rib and below line drawn between spine and angle of scapula, so that pain and tactile sense are not distinguished, while localisation remains good to within 2 inches. Some hyperæsthesia of extensor surfaces of forearms. Complete retention of urine. Incontinence of fæces. Right patellar reflex normal; left patellar reflex absent. Arms abducted; forearms flexed; hands rest on pillow beside head. Fingers flexed. Triceps almost totally paralysed on both sides, as well as intrinsic muscles of hands. Deltoids weak. Trapezius muscles act. 4th day.—Heat and cold appreciated above line, but below that causes sensation of heat but no pain, even when painful to normal skin. Knee-jerks absent.

11th day.—Line of altered sensation raised to level of second rib in front and between spine and angle of scapula behind. Plantar reflexes just present. Knee-jerks absent. Cremasteric present; abdominal and thoracic reflexes absent. No sluggish tap contraction of muscles. Absolute paralysis of trunk, diaphragm, and lower extremities. Complete retention. Bowels only act with oil. Position of arms as before. Flexure and extension of wrists very feeble. Extension of forearms absent, while flexion is good on right side (supinator act) and poor on left (supinator very weak or not acting at all). Triceps almost powerless on both sides. Intrinsic muscles of hand paralysed. 20th day.—Right knee-jerk exaggerated. Slight return of power in right leg with spasmodic contraction of muscles when moved. Left knee-jerk just present; plantar reflexes present. No return of power in this leg. Tactile sensation and localisation good in legs, but pain sense still absent. 24th day.—Involuntary evacuation of bladder in gushes. Distension of bladder caused pain. 30th day.—Sensation normal over both lower extremities and trunk. Right patellar and plantar reflexes exaggerated. Deltoids act well. Infra- and supra-spinatus on both sides act, but are somewhat wasted. Right biceps and supinator longus on both sides act, while left biceps, right biceps, and extensor muscles of wrist are greatly paralysed, the muscles on the left side being more so than the right, while the left triceps are totally paralysed. Restoration of power in right leg maintained. Muscles of left lower extremity somewhat wasted. Possibly some power in intercostals. 37th day.—Left arm lies across chest; right arm position varies, as there is return of power. 42nd day.—Reaction to faradic current. Muscles of shoulder-girdle act on both sides. Triceps on both sides gives no reaction, and the extensor muscles of the forearm only react slightly with strong current, external carpo-radialis acting best. Supinator longus reacts well on both sides. Biceps and brachialis anticus react with strong current. No reaction by the muscles supplied by the ulna on either side. Flexor muscles of forearm and pronators, especially the flexor carpo-radialis, act fairly well. No optic neuritis. 46th day.—Transferred to Medical side, where he remained for 79 days. During this time the right leg and arm regained more power. Urine became alkaline, and bladder was washed out twice a day. Some shooting pain in forearms from elbow to the little finger, which was worse on left side. Intercostals began to act. Dynamometer was moved to 15 volts in the right hand, but registered nothing in the left. Some blunting of sensation said to be present below fifth ribs so that tactile and pain sense were confused, and heat and pain not properly distinguished. Muscles of left lower extremity wasted. Muscles arranged in order of power on 46th day:

- (1) Deltoids, supra- and infra-spinalis, pectorals.
- (2) Supinator longus (double).
- (3) Flexor carpi radialis.
- (4) Other forearm flexor and pronators with exception of ulnar muscles.
- (5) Biceps and brachialis anticus.
- (6) Extensor carpi radialis longus, and brevis.
- (7) Extensors of wrist.
- (8) { Triceps.  
Muscles of hand and ulnar muscles of forearm.

1. *Fractured spine.*—W. L.—, male, æt. 36 (admitted August 7th, 1894). Fell off top of omnibus on to back, striking the kerbstone. Said to have been intoxicated at time of accident. *On admission.*—Irregularity over 2nd, 3rd, and 4th dorsal spines, being most marked between 2nd and 3rd dorsal spines. Absolute anæsthesia below line drawn through 6th rib in nipple line, above which there was a narrow band of hyperæsthesia. No affection of sensation in arms or forearms. Absolute paralysis below line of anæsthesia. Breathing diaphragmatic, with exception perhaps of first two spaces. Knee-jerks absent. Slight plantar and cremasteric reflex. Retention of urine. Skin of trunk and legs covered with scaly eruption. Aug. 8th.—Fit occurred that consisted of twitchings of arms and legs and clenching of teeth, with cyanosis of face. Duration of fit was 10 minutes. 9th.—Area of hyperæsthesia in region of right intercostal nerve on inside of arm, with some blunting of sensation in forearm noted. 20th.—Two small blebs formed over left buttock. Retention. Bowels require aperients. No knowledge of the act of defæcation. Hyperæsthesia of right arm fading. Frontal headache, relieved by antipyrin, present. 30th.—Pressure sores healing. All reflexes absent. Sept. 7th.—Knee-jerks noticed for first time to-day on both sides. Cremasteric reflex also well marked on both sides. Distension of bladder produces discomfort. Retention of urine. Incontinence of fæces continued. Catheter *Stis horis*. 20th.—Cystitis. Irrigation of bladder. Bladder overflows if too much distended. 23rd.—Plantar reflexes reappeared. Incontinence of urine even soon after catheter was passed. Nature of this incontinence doubtful. Oct. 13th—

Commence at—	Absolute anæsthesia.		Diminished sensation.	
	Right.	Left.	Right.	Left.
Nipple line ...	7th space	8th rib	...	5th rib
Post-axillary line	8th rib	5th rib	...	9th rib
				6th rib

In mid-line behind anæsthesia absolute at 10th dorsal spine. No hyperæsthesia. Right knee-jerk present and fairly brisk; left not obtained. Abdominal and thoracic reflexes absent. Incontinence continues. Bowels require aperients. Nov. 11th.—Sensation unaltered. Both knee-jerks and plantar reflexes were brisk. No rigidity of legs, but on lifting thighs to obtain patellar reflex the muscles of the ham contracted at once and caused a slight flexion of knee. Dec. 10th.—Absolute anæsthesia commenced at 6th space in nipple line; above this there was a band of diminished sensation 1 inch in breadth. On tapping the extensors of thigh and plantar flexor of foot contractions of muscles result; they produce wheal-like elevations. No ankle-clonus. 29th.—Urine now comes in distinct gushes, but not to such a degree as to completely empty bladder. Catheter dispensed with. Bladder irrigated every other day. No control over or knowledge of act of defæcation. Legs are slightly wasted, but not more than would be expected from their disuse. Jan. 28th, 1895.—Some knowledge of act of defæcation, but no control. March 1st.—Interrupted current to muscles of legs, which all responded well. 12th.—Laminectomy. Removal of laminae of 3rd, 4th, and 5th dorsal vertebræ, which were ankylosed together to a great extent. The 5th lamina was removed just when the cord was seen to bulge



forward as if its contents were under pressure. The 3rd and 4th laminae were then removed piecemeal, when the cord seemed free from pressure. The body of the 2nd dorsal vertebra seemed on a more anterior level than the 3rd and succeeding vertebrae, thus causing pressure on the cord. Dura mater was extensively adherent to all laminae removed. The dura was not opened, but pressure by the finger elicited the fact that its contents were much thinner over area exposed than above or below. Wound healed well. A month after operation there was a band of hyperaesthesia from 6th space to the clavicles, and extended down arm and forearm on left side and arm and upper two thirds of forearm on right side, and could be felt.

*State on discharge to infirmary on 305th day.*—Anaesthesia absolute at 6th space. Plantar, abdominal, cremasteric, and patellar reflexes sometimes present and sometimes absent. Absolute paralysis of lower limbs, abdominal and intercostal muscles. Breathing diaphragmatic. Muscles of legs contracted when limbs were moved, so that thighs and limbs were rigid and pressed together. Tap contractions as shown by wheel-like contraction of muscles rarely obtained. Spontaneous but incomplete evacuation of bladder, with some feeling in urethra when urine passed. Distension of bladder caused discomfort, and evacuation could be started by straining. Incontinence of faeces, but some knowledge of their passage. No bedsores.

*History in infirmary.*—Patient had a succession of rigors. Large bed sore over sacrum developed. Cystitis soon followed, though bladder was being washed out regularly. Inflammation apparently spread to kidneys. Within one month of death his state was as follows:—Deep reflexes absent as a rule, but occasionally some slight impulse. Anaesthesia complete from umbilicus. Incontinence of urine and faeces. No rigidity of limbs. Immediately before death an attack of severe abdominal pain occurred, accompanied by flatulent distension. Death on 431th day. Cord removed 2 days after death. Dura mater very adherent to bone over area where laminae had been removed. The cord was, to the naked eye, normal down to the origin of the 2nd dorsal nerve. From here to the origin of the 6th dorsal nerve it was represented by a cord about the size of a cedar-wood pencil; from this sprang the 3rd, 4th, and 5th dorsal nerves. On examining this part of the cord it appeared that some nervous matter passed from normal cord to normal cord, and outside this was a fibrous envelope composed of the nerves that sprang from it, and fibrous tissue. The lower end of upper portion of cord was slightly expanded about the origin of the 2nd dorsal roots. Microscopical examination failed to establish the continuity of nervous matter in the affected portion of cord.

2. E. W.—, aet. 25, wheelwright. Patient was underneath waggon, removing springs, when the waggon fell on to his shoulders, doubling patient up. Admitted within half an hour of accident.

*On examination.*—Absolute paralysis of legs from thighs downwards.

*Sensation.*—Total anaesthesia below an oblique line passing from 2 inches below great trochanter to 3 inches below fold of groin on inner side of legs. There was also noted a band of hyperaesthesia 2 inches broad across the abdomen, whose top limit reached to the umbilicus.

*Reflexes.*—Knee: cremasteric and epigastric reflexes absent; plantar just obtainable.



*Deformity.*—Some irregularity between about 7th and 12th dorsal vertebræ. Retention.

2nd day.—Area of anæsthesia now commences at level of great trochanter on either side, and passes up in a curved line to the top of the root of penis, including the whole external genitals. Penis somewhat turgid. Fulness of bladder produces discomfort. Retention. Reflexes still absent. 6th day.—Bowels require aperients; retention continues. Line of absolute anæsthesia same as on admission, but above this there is an area whose top line is an irregular line crossing abdomen midway between umbilicus and pubes, within which anæsthesia and hyperæsthesia are mixed; above this line there is a narrow zone of hyperæsthesia. Behind absolute anæsthesia extends up to middle of sacrum, and blunted area of sensation to postero-superior spine on right and postero-inferior spine on left. Patient complains of a pain in lower part of abdomen, which is sometimes pricking, and sometimes dull, constant, and unconnected with state of bladder, whose emptying gives relief, but whose fulness is not well appreciated. Tap contraction of anterior tibial muscles fairly well marked. 10th day.—Patient can now perceive fairly distinctly the passage of catheter. Retention continues. Bladder irrigated. 11th day.—Absolute anæsthesia up to level of great trochanters, and from there sloping up to include genitals, which are again totally anæsthetic. Band of mixed anæsthesia and hyperæsthesia the same as before, but now mixed with delayed sensation. Retention continues. Bowels require Ol. Ricini. Reflexes still absent. Pain in abdomen has disappeared, but patient complains of "soreness" in lower part of left thorax between axillary lines. Tap contractions of muscles below knees and in right thigh are easily obtained. 18th day.—Anæsthesia still the same, genitals being quite anæsthetic. Area of mixed hyperæsthesia and anæsthesia remains the same. Doubtful patch of dulled sensation as large as five-shilling piece below umbilicus. Some sense of pain when bladder is full; catheter not felt. Urine acid. Bladder irrigated. Bowels act naturally. Profuse sweating. 27th day.—No change in anæsthesia, except that absolute anæsthesia is a trifle lower. Knee-jerks absent. Muscles form distinct wheals when struck lightly. Cramp in right foot, very painful. Morphia needed. 43rd day.—Anæsthesia absolute, same as on 18th day. Area of mixed sensation has been replaced by normal. Abdominal reflex present, others absent. 50th day.—Paralytic dribbling of urine commenced. Some urethritis. Pain in right foot, especially big toe, continues. Irrigation of bladder discontinued. Urine acid but offensive. Some tendency to bedsores. No wasting of muscles. 58th day.—Area of absolute anæsthesia commences at level of great trochanters, and extends up to and includes external genitals. No knee-jerks or plantar reflexes. During whole course nothing like a spontaneous micturition occurred. Discharged to infirmary on 84th day. 110th day.—Anæsthesia not altered. Knee-jerks absent. Plantar reflexes absent; abdominal brisk; thoracic absent. Retention. Distinct wasting of thigh muscles, more than would be accounted for by disuse. Died on 344th day. No alteration of anæsthesia; no rigidity of legs; no return of reflexes. Bedsores. Abscess of thigh. Great wasting of thighs, but not of legs. P.M.—Fracture dislocation of 11th and 12th dorsal vertebræ, so that the posterior surfaces of the vertebræ formed a sharp angle, over which cord was stretched. No actual compression. Dura mater adherent to bone, but not to spinal cord.

Twelfth dorsal and possibly 1st lumbar nerve was the last nerve to come off from normal cord as judged by naked eye.

3. C. H—, *et.* 33. Fall of 9 feet on to back and occiput, causing scalp wounds in last situation. On admission absolute paralysis of lower limbs and abdomen. Upper intercostal apparently acted. Absolute anaesthesia at 7th rib, and from this rib up to 5th rib in nipple line there was an area of dulled sensation. Plantar and abdominal reflexes present; cremasteric, thoracic, and patellar reflexes absent. Retention of urine and faeces. Arms not affected beyond shooting pain in right arm. Stricture of urethra. 11th day.—Urine foul; bladder irrigated. 23rd day.—Tapping muscles of calf caused wheal-like contraction of muscles. Raising knee off bed by passing hand into popliteal space caused contraction of flexor muscles of knee. Bowels still require aperients. 26th day.—Knee-jerks present on both sides. Incontinence of faeces. Partial incontinence of urine. Plantar and knee-jerks exaggerated. Ankle-clonus. Full bladder causes discomfort. Tap contraction present in all muscles of thighs and legs. Thoracic reflexes present. 64th day.—Urine passed involuntarily in gushes, but bladder is not entirely emptied by the act. Shooting pains in legs caused considerable discomfort. 116th day.—Sensation good down to 6th rib in nipple line; below this to within 2 inches of umbilicus was an area where tactile sensation was present, but no sensation of pain. Bowels still require aperient. Urine alkaline, and still occasionally discharged spontaneously, but catheter was required as before. "Pins and needles" in legs. Muscles of legs become rigid on manipulation, but otherwise flaccid. Passage of urine causes slight sensation in penis while passing. Occasional spontaneous drawing up of legs. 160th day.—Laminectomy. The 6th dorsal appeared to be most prominent spine. Vertebrae noticed to be slightly displaced and ankylosed together. Laminae of 5th, 6th, 7th vertebrae removed. Dura mater adherent. Cord appeared compressed. Irregularity in bodies discovered, the upper bodies being displaced back. Wound closed. Progress good. Anaesthesia absolute at 5th rib in nipple line. Pressure on abdomen appreciated, but skin here is quite anaesthetic. Knee-jerks brisk, as were also plantar reflexes. Ankle-clonus easily obtained. Lower limbs flaccid except when douched or manipulated, when rigidity occurred. Occasional spontaneous flexure and extension of thighs and legs, but not so marked as before operation. Urine sometimes dribbled away, sometimes came in gushes. Distension of bladder causes no sensation. Catheter still needed. Incontinence of faeces. Tap contraction of muscles easily obtained. Slight wasting of thigh and leg muscles. 23rd.—Spasmodic contractions of leg not so marked. Condition otherwise unaltered. Respiration diaphragmatic. Discharged on 211th day. 368th day.—Knee-jerks present, but not so marked as on discharge. Plantar reflexes absent; abdominal reflexes present. Line of anaesthesia unaltered. Deep pressure on abdomen appreciated at once, although skin is absolutely anaesthetic. Bedsore on sacrum. Urine discharged in gushes. No control over rectum or bladder. Legs now only become occasionally spastic on handling, and that but slightly. Tap contraction of muscles fairly well marked. Death on 629th day. No P.M.

4. J. H—, male, *et.* 44. Fall of 30 feet four years previously. Paraplegia followed, accompanied by loss of control over bladder and rectum. When discharged from hospital at end of a year he was able to walk with crutches

and had regained power over bladder and rectum. Power in legs increased, so that patient was able to follow his employment as a clerk until three months ago, when generally failing health caused his confinement to bed. About one year after the accident a sore place appeared on sole of left foot, which has not healed since. On admission, prominence of 5th lumbar spine. Muscles of legs wasted, but legs retain fair amount of power. Knee-jerks. Bladder and rectum normal. Partial anæsthesia is present in the posterior surface, forming a saddle-shaped area on buttock from 3rd sacral spine, and continuing down the back of both thighs and legs, and reaching the toes on both feet. On the left leg the partial anæsthesia extends on to front of leg, passing round just above head of fibula and passing down on to dorsum of foot, so as to include all toes, there being only a narrow band of normal sensation passing in front of internal malleolus as far as base of first metatarsal bone. The toes of this foot are distorted, the skin over them and on the anterior tender part of the sole being covered by a cauliflower mass, in the centre of which is an ulcer. External genitals and perinæum partially anæsthetic. Liver enlarged. Urine albuminous. Skin over whole body waxy. Discharged unrelieved on 53rd day.

*Fracture of axis.—Fatal case.*—W. J. B—, male, æt. 44. Fall of 6 feet. Unconscious. Carried up to bed. Recovery of consciousness. Inability to move head. Removed to hospital in a train. Walked into Casualty Department. Head projected forwards, so that face looked down. Muscles of neck rigid. Small scalp wound in occipital region. Tenderness over occiput and right mastoid region. No deviation of cervical spines. Head projection at back of pharynx on level with hard palate. No paralysis. No anæsthesia. Placed on back without pillow. Head fixed with sand-bags. Some doubt as to real nature of injury. Third day rotation of head possible without pain. Fourth day, movement improved. Same treatment. Eighth day, sudden attack of dyspnoea while bed was made. Retraction of ribs. Death in 15 minutes. P.M.—Fracture through axis in such a way as to divide left and right superior articular facets with odontoid process from lower two articular facets. The fracture passed obliquely from lower left-hand corner to right-hand upper corner of body of axis. Spinal cord normal to naked eye.

*Contusions of abdomen.*—Males 20, females 7. C. 26, D. 1.

*Retro-peritoneal hæmorrhage.—Fatal case.*—T. B—, male, æt. 18. Struck in the abdomen by a destination board that was lying on the footboard of a train in motion. Great pain and shock with violent pain in epigastrium. Abdomen tender, no dulness. Vomiting of brown fluid. Cæliotomy. Gastro-hepatic omentum ruptured, giving entrance to lesser sac. Lymphatic of intestines and mesentery greatly distended with milk-like fluid. Operation relieved pain, but patient sank and died in few hours. P.M.—Peritoneum contained  $\frac{3}{4}$  pint of blood. Areolar tissue around right kidney infiltrated with blood, as was also the transverse mesocolon and right psoas muscle at its origin. Other organs healthy.

*Ruptured kidney.*—Males 9. C. 7, D. 2.

*Fatal cases.*

1. T. P—, male, æt. 20. Caught between buffers of two trucks. Admitted greatly collapsed, with no signs in abdomen. Rallied. Restlessness. Legs



good colour. Urine smoky. Dulness in right flank developed, but did not shift. Restlessness continued. Some pain in abdomen in epigastrium. Shifting dulness developed in left flank. Celiotomy. Right kidney found in abdomen attached by only few shreds of tissue at hilus. Kidney was without its capsule. Black blood and clots turned out. Renal vein found bleeding and clamped. Great quantity of blood lost. Infusion. Saline rectal injections. Morphia was necessary, as restlessness was so great. Hypodermic injection of strychnine. Death suddenly in 24 hours from operation. P.M.—Renal vein torn across close to vena cava. Renal artery pulled out to point and closed in classical manner. Rent in peritoneum in position of right kidney. Small rupture on under surface of right lobe of liver and behind close to coronary ligaments. No fresh hæmorrhage. Internal organs not blanched. Kidney in museum.

2. J. C—, male, æt. 42. Knocked down and run over by railway truck. Compound fracture of tibia and fibula in lower third. Hæmaturia. Dulness developed later in right flank, with fulness in same situation. Death on day following admission. P.M.—Fracture of right scapula running from supra-scapular notch to junction of upper and middle thirds of axillary border. Peritoneal cavity contained gas. No rupture of bowel or stomach found. Blood about right kidney, which was hydronephrotic, but not enlarged. Ureter not dilated. Right 11th rib broken; free and projecting into pleura. Lungs deeply congested. Aortic valves incompetent.

*Ruptured liver.*

*Fatal cases.*

1. B. B—, male, æt. 69. Death in Casualty. Run over by omnibus. Simple transverse fracture of right radius and ulna 1 inch from lower extremity. One and a half pints of blood in peritoneal cavity. Liver ruptured, the line of rupture running from the middle of posterior surface of right lobe, and extending forwards almost to anterior margin, so that organ was almost divided into two parts. Chronic interstitial nephritis of kidneys. Atheroma of mitral valves and aorta. Blood-stained fluid in both pleure. Lungs congested. On right side 11th and 12th ribs just external to their angles, while on left side 12th rib was fractured at same situation. Pleura uninjured.

2. L. T—, female, æt. 56. Died in Casualty. P.M.—Fracture humerus in upper third. On left side 9th rib was broken; while on the right, 4th to 7th ribs were in similar condition. One pint of blood in each pleura. Free blood in peritoneum. Great omentum torn. Extensive laceration of under surface of right lobe of liver. Right kidney entirely disorganised. Spleen torn across. Brain normal.

*Ruptured spleen.*—Males 4, females 1. C. 3, D. 2. Splenectomy in 3. (See 'Clin. Soc. Trans.,' 1895-6.)

*Fatal cases.*

1. E. T. P—, male, æt. 4½. Run over across the abdomen by a brougham. Admitted in a state of extreme collapse. Resented examination. Shifting dulness in left flank. Abdomen flaccid. Hypodermic stimulants. Death in a few hours. P.M.—Peritoneum contained 1½ pints of blood. Retro-peritoneal hæmorrhage extended from spleen across right kidney to pelvic brim. Spleen torn across antero-internal surface to the depth of ¼ inch. Right kidney torn



so as to open hilum and extend on to anterior surface, almost separating top of this organ. Renal artery and vein torn across. Two or three ruptures of liver, but these did not extend to the surface. No external injury. Blood-stained fluid in both pleuræ. Lungs congested.

2. W. L—, male, æt. 13. Run over across belly by a full omnibus. Admitted pulseless and greatly collapsed. Skin of abdomen grazed. Rigidity of abdomen not marked. Dulness in left flank that did not shift but gradually encroached on mid line. Liver dulness  $1\frac{1}{2}$  inches below costal margin. Hot bottles and stimulants. Some improvement. Death suddenly within 12 hours of admission. P.M.—Blood and clots in peritoneal cavity to extent of 2 pints. Spleen ruptured in two places through half its breadth. Liver exhibited ragged tear through anterior edge, extending on to convex surface. Both kidneys torn through for half their breadth. Hæmorrhage into pericardial connective tissue about base of heart.

*Ruptured gut.*

*Fatal cases.*

1. W. T—, male, æt. 57. Run over across the left inguinal region by a cart, the course of the wheel being marked by grazing of the skin. Admitted 12 midnight. Tenderness in inguinal region and upper part of left thigh. A small left inguinal hernia was found that just protruded into upper part of scrotum. This appeared almost reducible, but suggested some adherent omentum. Little or no tenderness about sac. Abdomen flaccid. Patient expressed himself comfortable while lying still. Following morning nothing worthy of note was found. In the evening of the same day, 6 p.m., patient vomited the contents of stomach and rapidly became worse. Abdomen examined and found distended and rigid, with dulness in left flank that did not shift. Features pinched. Cæliotomy. General peritonitis; quantity of lymph. Rupture of small gut found three quarters of an inch in extent in long axis of gut and on free border of intestine; edges ragged. Sutured by Lembert's stitches; irrigation; great collapse; sac of hernia found empty; wall very thick. Interior of sac showed a ridge, one side of which was ragged, suggesting that something had been adherent and had been torn off. Death in few hours after operation. Highest temperature  $100.6^{\circ}$ . P.M.—Abdominal cavity contained half a pint of turbid fluid. Rupture of gut 11 feet from pylorus. Union of gut was good. Lungs adherent from base to apex and congested. Liver curled up, suggesting perihepatitis. Three calcareous nodules on anterior surface projected from its level; hard on palpation; centres soft; probably obsolete hydatids.

2. T. Y—, male, æt. 12. Run over across abdomen by a cart the day before admission. No symptoms appeared until morning of admission. On examination some collapse; anxious expression of face; severe pain in lower part of abdomen above the pubes; no dulness in flanks; no retention; constant vomiting. 2nd day.—Cæliotomy; intestines injected; blood in peritoneal cavity; inflammatory lymph on intestines; transverse rupture of small intestine found that involved half circumference of gut; edges fairly cleanly divided. Resection; circular enterorrhaphy. Death in 36 hours. P.M.—Acute general suppurative peritonitis; much lymph; one pint of turbid fluid; patches of intense congestion on intestine. Seat of rupture 44 inches from ileo-cæcal valve; no leakage at line of suture; some fluid in both pleuræ; lungs congested.

*Ruptured bladder.*—E. T—, female, æt. 30. Fall downstairs 3 days previously. Immediate severe abdominal pain, which subsided in a few hours. Confined to bed until admission. Retention requiring catheter until the day of admission, when 3 or 4 ounces were voided naturally. Abdomen distended; dulness in flanks and in supra-pubic region. Catheter passed and drew off 4 ounces of non-blood-stained urine; on pushing catheter further in more urine came away; vomiting. Cœliotomy. Clear fluid in belly to amount of 1 pint, not blood-stained; no urea. Rupture large enough to admit  $\frac{1}{16}$  sound; situated just behind summit; closed by 9 Lembert sutures. Intestines showed slight injection only. Irrigation; wound closed. Death in a few hours.

*Ruptured urethra.*—Males 9. C. 9. Immediate suture 7; external urethrotomy and catheter tied in 1; incomplete rupture and catheter tied in 1. One case admitted twice (subsequently) for stricture.

*Ruptured pelvis.*—Males 2, females 2. C. 3, D. 1. Two doubtful cases.

A. W—, female, æt. 45. Run over by a hansom cab. Patient said that bladder was full at time of accident, and that she passed water involuntarily. No bruising of skin. Tender spot above pubes. Movement of left leg caused pain in left hip. No fracture detected. Three ounces of bloody urine passed. Renewed examination in a few hours. One ounce of bloody urine drawn off with catheter. Tenderness elicited over left pubes and sacro-iliac synchondrosis on the right side. Some dulness above pubes; none in flanks. Abdomen slightly distended. Operation within 24 hours. Incision in mid line immediately above pubes. Urine welled up when subperitoneal tissue was reached. Catheter in bladder revealed rent in anterior wall of bladder, through which finger could be passed. Rent caused by oblique fracture of horizontal ramus. Tube inserted into subperitoneal tissue, and long outside applied to left leg. Urine ceased to come through wound in 21 days, and in 2 more days patient passed urine naturally. Patient walked in 54 days, and left hospital on 68th day.

#### *Fatal cases.*

1. E. H—, female, æt. 74. Run over by an omnibus. Admitted in a state of extreme collapse. Hot-water bottles; stimulant. Died in 2½ hours. P.M.—Extensive clean-cut wound of right thigh just below Poupart's ligament. Femoral vessels exposed, but not injured. Right femur extensively comminuted in middle third, and this rendered compound by a punctured wound on inner side of thigh. Rami of pubes and ischium splintered on left side, while sacro-iliac joint was started and the transverse process of 5th lumbar vertebra torn off on the right side. Fifth to 10th ribs fractured in middle of their extent on left side. Pleura contained  $\frac{1}{2}$  pint of blood, but the lung was intact.

2. H. P—, male, æt. 30. Run over by locomotive. Death within 1 hour of admission. P.M.—Left hand crushed, index shorn off; left leg crushed for space of 5 inches in middle; left femur fractured oblique about its middle; right femur fractured in lower third. Fracture completely through wing of right ilium just outside sacro-iliac joint, and through rami of pubes and ischium into obturator foramen on the right side. No abdominal injury. Some hæmorrhage into right psoas muscle.

## INJURIES OF UPPER EXTREMITY.

*Wounds of forearm.*—Males 12, females 7. Tendons divided in 9; ulnar nerve 3; median nerve 2; radial 1. Secondary hæmorrhage 1. Immediate suture of nerves 5; resection and suture 1.

*Dislocations of humerus.*—Males 3. C. 2, U. 1. One old case of 3 months' duration; attempted reduction under anæsthetic.

*Fractures of humerus.*—Males 9, female 1. C. 10. Junction of upper and middle third 3; junction of middle and lower third 1; surgical neck 2; anatomical neck (?) 1; middle of shaft 1; internal condyle 2. Direct violence 4; indirect violence 6.

*Separation of epiphysis of humerus.*—H. K—, male, æt. 13. Run over by van across chest. Admitted with anterior dislocation of sternal end of clavicle and compound separation of upper epiphysis of left humerus, the bone protruding on posterior aspect of arm. Much shock. Wound cleaned. Shaft and epiphysis manipulated into position through wound. Periosteum stitched over shaft to retain it in position. Joint apparently not opened. Pneumothorax on right side. Surgical emphysema appeared at root of neck in front, and spread into arms, neck, and abdomen. Aspiration of thorax; air withdrawn. Temperature remained high. Wound in arm suppurated. Second aspiration; pus evacuated. Death on 16th day. P.M.—Pyo-pneumothorax on right side;  $\frac{1}{2}$  pint of pus and much purulent lymph found. Lung compressed absolutely. No fractured ribs. Right bronchus ruptured so as to admit index finger, rupture being longitudinal. In immediate vicinity was a hard gland, which might have caused rupture by its pressure when accident occurred. Emphysema has originated from this wound, the air passing up along the vessels to the root of neck. Specimen of humerus in museum.

*Compound comminuted fracture of humerus.*—Males 3. C. 3. Surgical neck 1; lower extremity 1; into elbow-joint 1. Amputation at shoulder-joint 1; Direct violence in all.

*Fracture of ulna.*—Males 4. C. 4. One compound and 1 simple fracture wired.

*Fracture of radius and ulna.*—Males 2, females 1. Junction of middle and lower thirds 1; junction of upper and middle thirds 1; centre of shaft 1.

*Compound comminuted of phalanges.*—Males 5, female 1. Amputation in 3; remainder trimmed. Hot lotions 2; creolin 1; boracic bath 1.

## INJURIES OF LOWER EXTREMITY.

*Wounds of thigh.*—Males 4. C. 2, R. 1, D. 1. Punctured wound 1, machinery accident 1.

W. B—, male, æt. 29. Patient fell a distance of 20 feet on to some railings, a spike of which penetrated the left thigh in Scarpa's triangle and broke off flush with the skin. The spike measured 3' x 6". The femur was unin-

jured, the spike passing to the inner side of that bone and the femoral vessels, and compressing the latter so that the leg was cold and pulseless. Considerable force was required to withdraw the foreign body, whose point reached to the tuber ischii. There was a large ragged cavity left, crossed in front by the femoral vessels, which were much bruised, and behind by the sciatic nerve. A counter-puncture was made behind for drainage, and the wound cleaned and partially closed. Five days after admission secondary hæmorrhage occurred, and the artery was exposed and ligatured above and below where healthy, about 3 inches of vessel being removed. The vein was rotten and gave way, and was ligatured also, while the internal saphenous vein was also cut in removing some sloughing skin. The wound suppurated but subsequently did well, the temperature becoming normal on the 41st day. A useful limb has resulted.

*Fatal case.*—A. P—, male, æt. 5. Run over by van. Large lacerated wound of thigh (right) much ingrained with dirt; knee-joint opened; vessels not exposed; anæsthetic wound cleaned; skin stitched; boracic bath; temperature somewhat up; patient evidently losing ground; secondary amputation below lesser trochanter; temperature higher; general condition worse. Death on 5th day. P.M.—Wound foul; lungs congested; no other disease.

*Traumatic synovitis.*—Knee in all cases. Superficial wounds in 2 cases, rupture of ligaments in 3, amputation in 1.

*Penetrating wound of joints.*—Fell on to poker 1; fell down in street 1; foot caught in lift 1; synovia escaped 1. Arthrotomy of knee with continuous irrigation and plaster splint 1.

*Dislocation of femur.*—Male 1, female 1. C. 2. Fall of weight on shoulder while trunk was flexed on the thighs and the knees extended. Passage of wheel over pelvis 1. Reduction by manipulation in both.

*Dislocation of ankle.*—Direct violence; compound comminuted fracture of tarsal bones. Amputation in lower third of leg.

*Fracture of shaft of femur.*—Males 50, females 21. Upper third 24; middle third 27; lower third 17. Impacted involving great trochanter 1; separation of lower epiphysis 1; T-shaped into knee 1; direct violence 15; indirect violence 54; violence not stated 2; transverse 24; greenstick 2. *Complications.*—Synovitis of knee 3; rheumatoid of hip 1; fracture at same seat 3 months previously 1; flexed ankylosis of hip 1; previous amputation on same side as fracture 1. *Treatment.*—Plaster-of-Paris splint 46; plaster splint and extension 22; Hodge's splint 1; ice and Macintyre followed by plaster splint and extension 1; rest 1 (impacted fracture); delayed union 3. Shortening noted:  $\frac{1}{2}$  inch in 5;  $\frac{3}{4}$  inch in 3; 1 inch in 2;  $1\frac{1}{4}$  inches in 1;  $1\frac{1}{2}$  inches in 1;  $1\frac{3}{4}$  inches in 1.

*Fatal case.*—R. L. J—, male, æt. 59. Fall 20 feet. Fractured right femur in upper third; fracture of right ilium and pubes; anæsthetic and plaster-of-Paris splint, with large outside splint to left leg. Temperature rose; rhonchi over lungs. Death on 8th day. P.M.—Edema of lungs; right heart dilated and hypertrophied.

*Compound fracture of shaft of femur.*—Males 2. C. 1, D. 1. Small punctured fracture by indirect violence.



*Fatal case.*—C. B—, male, æt. 50. Found lying beneath Thames Embankment. Admitted with double fracture of patella; compound fracture of femur in middle of shaft; fracture of inferior maxilla, radius, and olecranon. Patient was anaesthetised to put fracture in plaster splint, when respiration ceased, and failed to be re-established in spite of all efforts. P.M.—4th and 5th ribs fractured on right side. Fracture of patella was star-shaped. Other organs normal except the lungs, which were emphysematous.

*Fracture of neck of femur.*—Males 5, females 12. C. 7, R. 9, D. 1. Impacted 6; unimpacted 11; rheumatoid arthritis 2. Shortening noted:  $\frac{1}{2}$  inch in 3;  $\frac{3}{4}$  inch in 5; 1 inch in 2;  $1\frac{1}{4}$  inches in 1. Sand-bags 6; long outside splint 6; rest 1; extension 3.

*Fatal case.*—H. H—, female, æt. 66. Fell while crossing road. Inability to move left leg; no shortening. Trochanter major in normal position. Rest in bed with long outside splint. Shortening now found to amount to  $\frac{3}{4}$  inch. Sudden death on 15th day. P.M.—Emphysema and hypostatic congestion of lungs; 20 ounces of turbid fluid in left pleura; right ventricle hypertrophied; auricles dilated; atheroma of aorta with calcareous plates; right kidney atrophic; left kidney hypertrophied; arteries at base of brain much diseased. A transverse unimpacted intracapsular fracture of neck of femur found. Capsule intact.

*Fracture of patella.*—Comminuted 5. Previous fractures in 4, in one of which there had been 3 accidents in all. In one case the fracture was through bone in a fresh place, in the other through the fibrous union. Interval of time being 31 years, 6 years, "many years," and in the fourth case 19 years, 18 years. Direct violence 15; indirect 27; not stated 1. *Treatment.*—Wired by open method 15. Two of these were old cases, and, in order to approximate the fragments, the tubercle of tibia was chiselled off and re-pegged higher up, and the quadriceps tendon also divided. Approximated with pins 1; screwed by open method 1; aspirated 1; arthrotomy to remove clots 1. Two cases suppurated, one being the case pinned, and the other a case treated by open method. Both left with stiff knees.

*Fracture of tibia and fibula.*—Males 49, females 29. C. 78. Pott's fracture 8; upper third 7; middle third 5; lower third 35; malleoli 3; not stated 1; remainder, fracture was at different situations in tibia and fibula; greenstick 1. Direct violence 10; indirect violence 66; violence not stated 2. *Complications.*—Delirium tremens 1; dislocation of foot back 2. *Treatment.*—Neville splint followed by plaster splints 3; remainder by immediate plaster splints.

*Comminuted fracture of tibia and fibula.*—Males 4. C. 4. Direct violence 2; indirect violence 2. Lower third 2; middle third 1; tibia lower third and fibula middle third 1. Plaster in all.

*Compound fracture of tibia and fibula.*—Males 7, females 1. C. 7, D. 1. Indirect violence 5; direct violence 3. Tibia upper third and fibula middle third 1; tibia middle third and fibula upper third 1; tibia lower third and fibula upper third 1; both bones upper third 1; lower third 2; malleoli 1; Pott's 1. *Treatment.*—Antiseptics and plaster splints 5; continuous irrigation 2; wired, antiseptics 1; extraction of wire 1.

*Fatal case.*—Pyæmia. See Special Table.

*Compound comminuted fracture of tibia and fibula.*—Males 5, females 2. C. 5, D. 2. Direct violence 5; indirect violence 2. Lower third 5; middle third 1; upper third 1.

*Treatment.*—Antiseptics and plaster 1; wired 2 (wire removed 1); primary amputation 3; secondary amputation 1.

*Fatal cases.*

1. M. B—, female, æt. 50. Run over by van. Compound comminuted fracture of tibia and fibula (left) in middle third. Great stripping up of soft parts. Hæmatoma of right foot and separation of little toe. Great shock. Infusion of one pint of normal saline. Amputation at seat of election. Progress good for some hours, when state of collapse supervened and patient died in 30 hours in spite of second infusion. P.M.—Lungs emphysematous. Few adhesions in pleura. Early atheroma of aorta. Early fatty change in liver. Other organs healthy.

2. C. B—, female, æt. 4½. Run over by tramcar. Compound comminuted fracture of left tibia and fibula in middle third. Limb completely disorganised. Head of first right metatarsal bone fractured, while skin of foot was bruised and torn. Great shock. Shock passed off in few hours. Amputation at seat of election. Removal of head of metatarsal bone. Death within few hours of operation. P.M.—Organs healthy.

*Fracture of tibia.*—Males 15, females 2. C. 17. Middle third 4; lower third 13. Direct violence 2; indirect violence 13; not stated 2. Immediate plaster splints in all.

*Compound fractures of tibia.*—Males 3, females 1. C. 4. Lower third in all. Direct violence 1; indirect violence 3. Antiseptics and immediate plaster in all.

*Fracture of fibula.*—Males 16, females 7. C. 23. Pott's fracture 16; lower third 7. Direct violence 1; indirect violence 22; delirium tremens 1. Neville's splint followed by plaster splint 1; remainder immediate plaster splints.

*Compound fracture of fibula.*—Males 2. C. 1, R. 1. Pott's fracture 1; lower third 1. Indirect violence in both. Pott's treated by antiseptic and plaster splint; fracture in lower third by irrigation and secondary amputation of leg in upper third.

*Vicious Union.*—Femur 2; clavicle 1; radius and ulna 1; tibia and fibula 1; Pott's 1; humerus 1. *Treatment.*—Osteotomy of radius and ulna (suppuration); humerus, tibia, and fibula; Pott's straightened under anæsthetic. Femur and clavicle nil.

*Ununited fracture.*—The case of the tibia occurred in a child, and had been present for some time. The child was the subject of rachitis, and presented congenital absence of right fibula and the middle portion of right ulna. Humerus was fractured 4 months previously, and was wired. No union on discharge.

## SPECIAL TABLES.

## SPECIAL TABLE I.—

INGUINAL HERNIA.—*a. Strangulated*

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
1	Labourer	M.	66	R.	Many years	Few hours	Acquired
2	—	M.	1 $\frac{3}{4}$ years	L.	Since birth	24 hours	Funicular
3	—	F.	2 months	R.	Since birth	Few hours	Enterocoele
4	House-work	F.	38	L.	12 hours	12 hours	?
5	House-work	F.	36	R.	6 hours	6 hours	?

*b. Strangulated Irreducible.*

6	Builder	M.	23	L.	3 years	3 hours	Enteropiplocele
7	Engineer	M.	35	L.	6 years	7 hours	Epiplocele
8	Labourer	M.	58	L.	34 years	8 hours	Epiplocele

*c. Strangulated Irreducible.*

9	Engineer	M.	28	R.	45 years	26 hours	Epiplocele; funicular
10	Machinist	M.	42	R.	7 months	Few hours	Enterocoele
11	Traveller	M.	26	R.	7 years	7 hours	Enteropiplocele; congenital
12	—	M.	17	L.	4 years	Few hours	Enterocoele; congenital



## HERNIA.

*Irreducible. No operation.*

Treatment.	No. of days in hospital	Result.	Remarks.
Ice-bag after hot bath. Spontaneous reduction. Truss	4	C.	
Chloroform, taxis, reduction. Wool truss	9	C.	
Chloroform, taxis, reduction	1	C.	
Taxis, reduction. Truss	3	C.	
Anæsthetic. Spontaneous reduction. Truss	6	C.	

*Reduction followed by Radical Cure.*

Ice-bag. Spontaneous reduction. Radical cure after 7 days. Omentum ligatured and ablated. Sac ligatured and ablated. Pillars not sewn	11	D.	Vomiting incessant after operation. Dulness in left flank. Cœliotomy through semilunar line. Localised abscess about the ligature of stump of omentum, which had been applied extremely close to colon. Local cleansing. Wound closed. Death in 2 days. P.M.—General acute septic plastic peritonitis; no injury of gut found.
Hot bath. Taxis, reduction. Radical cure after 2 days. Gut replaced. Kocker's method of radical cure	18	C.	Reducible inguinal hernia on right side.
Anæsthetic. Taxis, reduction. Immediate radical cure. Sac empty. Ligatured with silk and ablated. Pillars not sewn	23	C.	Previous strangulated inguinal hernia on right side.

*Herniotomy and Radical Cure.*

Omentum ligatured and ablated. Radical cure by Macewen's method (catgut and kangaroo tendon)	17	C.	Brouchitis. Sac hour-glass shaped.
Gut replaced. Sac ligatured and ablated. Pillars and conjoint tendon approximated	18	C.	Gut congested.
Omentum ligatured and ablated. Tunica vaginalis left <i>in situ</i> . Sac by Kocker's method. Pillars approximated with four kangaroo tendons	17	C.	Sac contained congested small gut.
Sac ligatured and ablated. Testis sewn to bottom of scrotum after inversion. Pillars not sewn	17	C.	Undescended testis in canal. Sac contained congested small gut and yellow fluid.

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
13	Labourer	M.	31	L.	2 years	10 hours	Enterocoele
14	Grocer	M.	43	L.	5 years	Few hours	Entero- epiplocele
15	—	M.	76	L.	Many years	8 hours	Enterocoele
16	—	M.	16	R.	Many years	24 hours	Enterocoele; congenital
17	Bricklayer	M.	36	?	4 years	18 hours	Enterocoele
18	Bottle maker	M.	16	R.	10 months	13 hours	Enterocoele
19	Stove setter	M.	65	L.	3 days	3 days	Entero- epiplocele; congenital
20	Shopman	M.	27	L.	2 years	4 hours	Enterocoele
21	Labourer	M.	58	R.	Since childhood	5 hours	Enterocoele
22	Porter	M.	67	R.	5 years	3 days	Enterocoele
23	General dealer	M.	26	R.	2 days	2 days	Enterocoele
24	Painter	M.	49	R.	2 years	24 hours	Enterocoele
25	Compositor	M.	27	R.	19 years	7 hours	—
26	Widow	F.	59	L.	30 years	2 days	Entero- epiplocele

Treatment.	No. of days in hospital.	Result.	Remarks.
Macewen's methods of radical cure. (Silk and kangaroo tendon)	33	C.	Sac contained blood-stained fluid and large amount of small gut. Suppuration.
Omentum ligatured and ablated. Sac ligatured with silk and ablated. Pillars and conjoined tendon approximated with silk sutures	29	C.	Admitted with reducible hernia, which became strangulated during the night while patient was in bed. No cause ascertained. Small gut slightly congested. Some blood-stained fluid in sac.
Gut replaced. Sac ligatured and ablated. Pillars not sewn	20	C.	Gut in good condition. Hæmorrhage from bowel for some days after operation.
Small intestine replaced. Omentum ligatured and ablated. Sac ligatured and ablated. Pillars sutured with kangaroo tendon. Testis sutured to bottom of scrotum	13	C.	Undescended testis. Small gut considerably congested, but soon regained natural colour.
Small gut reduced. Sac ligatured with silk and ablated. Canal sutured with four kangaroo tendons	14	C.	Sac contained clear fluid and knuckle of small gut.
Adhesions separated, small gut reduced. Sac ligatured with silk and ablated. Pillars approximated with silk	33	C.	Gut slightly congested. Suppurated.
Omentum ligatured and ablated. Large gut replaced. Sac ligatured and ablated	17	C.	Large mass of omentum greatly matted and indurated.
Small gut reduced. Sac ligatured and ablated. Pillars not sewn.	21	C.	Gut in good condition.
Small gut reduced. Sac ligatured and ablated	18	C.	Gut deeply congested, with loss of polish in places.
Small gut replaced. Sac ligatured with catgut and ablated. Pillars approximated with kangaroo tendon.	19	C.	Two loops of small gut in sac.
Small gut reduced. Radical cure by Macewen's method with catgut	15	C.	
Small gut reduced. Large gut adherent at neck of sac. Sac divided and ligatured below adherent gut, and the whole pushed back. Bottom of sac ablated. Pillars stitched with catgut	21	C.	Gut in good condition. Constriction at external ring.
Anæsthetic. Partial reduction. Sac ligatured and ablated. Pillars sewn with kangaroo tendon	21	C.	When sac was opened it only contained yellow opaque fluid, and communicated with abdomen.
Large gut and omentum replaced. Sac ligatured and ablated. Pillars and conjoined tendon approximated	16	C.	Recent adhesions about the large gut. Two ounces of serous fluid in sac.

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
27	—	M.	57	L.	Many years	36 hours	Enterocoele
28	—	M.	3 months	R.	Since birth	2 days	Enterocoele; congenital
29	—	F.	55	L.	10 years	36 hours	Enterocoele
<i>d. Strangulated Irreducible.</i>							
30	Labourer	M.	37	R.	2 days	2 days	Enterocoele
31	—	M.	6	R.	3 months	6 days	Enterocoele
32	Lighterman	M.	46	L.	20 years	12 hours	Enterocoele
<i>e. Strangulated Irreducible.</i>							
33	Widow	F.	68	R.	3 days	3 days	Enterocoele



Treatment.	No. of days in hospital.	Result.	Remarks.
Small gut replaced. Sac ligatured with silk and ablated. Canal and conjoined tendon sewn with kangaroo tendon	2	D.	1½ feet of small gut in sac, congested with two rings of grey colour at seats of constriction. Distended abdomen after operation. Fæcal vomiting; collapse; death. P.M.—Gut involved, much congested, as was also its mesentery. Lower constriction 7½ inches from ileo-cæcal valve. Both constrictions grey and sloughing.
Sac ligatured, and upper part ablated. Pillars not sewn	7	D.	Knuckle of small gut in sac somewhat congested. Gut involved was near cæcum. Mesentery congested. Gut in good condition.
Small gut returned. Sac ligatured with silk and ablated. Pillars approximated with silk	11	D.	Sac contained 2 ounces of clear fluid and knuckle of small gut, congested, but the polish was intact. Patient did well for 7 days, when pain in abdomen was complained of, and moist sounds were detected at base. Death. No P.M.

*Herniotomy only.*

Hernia apparently reducible. Cœliotomy in semilunar line. Constriction at internal ring relieved. Small gut reduced. Abdomen closed	6	D.	Rusty expectoration. Dulness at base of lungs. Death. P.M.—Acute pneumonia; old adhesions found between coats of small gut near to cæcum; no recent peritonitis.
Hernia opened. Gut gangrenous and surrounded by pus. Constriction relieved. Pus found in abdomen. Attempted irrigation	1	D.	Patient much collapsed. Died as irrigation of abdomen was started. P.M.—Acute general septic peritonitis; knuckle involved was within a foot from cæcum.
Small gut reduced. Sac stitched at neck and ablated	2	D.	Two feet of deeply congested gut in sac, surrounded by dark fluid devoid of odour. Constriction caused by a band at neck of sac. Patient sank and died. P.M.—General peritonitis of plastic variety, but little fluid; gut and mesentery deeply congested; gut marked by two grey rings; gut involved was 6 feet from cæcum.

*Herniotomy. Fæcal Fistulæ.*

Sac incised. Gut found gangrenous. Constriction relieved. Gut retained <i>in situ</i>	9	D.	Free discharge of fæcal matter. Patient gradually sank. P.M.—Small knuckle of small gut involved. Neighbouring gut healthy. Fæcal fistula 9 feet from commencement of jejunum. No peritonitis.
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FEMORAL HERNIA.—*a. Strangulated*

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
1	Widow	F.	59	R.	10 months	13 hours	Enterocoele
2	Married	F.	68	R.	12 months	3 days	Enterocoele
3	Widow	F.	38	R.	7 years	24 hours	Enterocoele
4	Widow	F.	70	R.	15 years	2 days	Enterocoele
5	—	F.	60	L.	16 years	5 hours	Enterocoele
6	Married	F.	77	L.	2 years	60 hours	Entero-epiplocele
7	Widow	F.	55	R.	37 years	36 hours	Entero-epiplocele
8	Single	F.	40	R.	7 years	28 hours	Enterocoele
9	Widow	F.	66	L.	7 hours	7 hours	Enterocoele
10	—	F.	11	R.	3 years	18 hours	Entero-epiplocele
11	Married	F.	36	?	?	?	Enterocoele
12	Married	F.	36	L.	12 months	24 hours	Enterocoele
13	Married	F.	45	L.	Same years	2 days	Epiplocele
14	Married	F.	27	R.	5 days	5 days	Enterocoele
15	—	F.	45	R.	20 years	60 hours	Enterocoele
16	Widow	F.	75	R.	40 years	24 hours	Enterocoele
17	Single	F.	30	R.	2 years	5 days	Enterocoele
18	Married	F.	45	R.	7 days	4 days	Enterocoele ?
19	—	M.	48	R.	5 years	24 hours	Entero-epiplocele
20	Widow	F.	70	R.	11 days	11 days	Enterocoele

*Irreducible. Herniotomy and Radical Cure.*

Treatment.	No. of days in hospital	Result.	Remarks
Small gut reduced. Sac twisted, ligatured with catgut. Fascia stitched	28	C.	Gut congested.
Gut incised by mistake, as it was impossible to differentiate sac and gut. Gut sutured and returned. Sac ligatured and ablated	25	C.	Small knuckle of gut involved; deeply congested. Progress excellent.
Sac quilted	11	C.	Small gut deeply congested.
Small gut replaced. Sac ligatured and ablated. Fascia stitched	12	C.	Gut deeply congested; only small knuckle involved.
Small gut replaced. Peritoneal coat was ruptured and required to be stitched. Sac ligatured and ablated. Pectineal flaps	18	C.	An aperient pill apparently caused strangulation. Taxis attempted before admission. Gut in fairly good state.
Small gut replaced. Omentum ligatured and ablated. Sac sutured with silk and ablated	11	C.	Gut deeply congested.
Small gut reduced. Large mass of omentum ligatured and ablated. Sac ligatured and ablated	15	C.	Sac contained 8 ounces of serous fluid. Small knuckle of gut alone in sac.
Gut reduced. Sac ligatured with silk and ablated. Fascia stitched	15	C.	Small intestine but slightly congested.
Small gut reduced. Sac ligatured with silk and ablated	28	C.	Gut very little congested. Suppuration.
Small gut reduced. Omentum ligatured with catgut and ablated	17	C.	Small knuckle, deeply congested. Blood-stained fluid in sac. Omentum slightly adherent.
Small gut returned. Sac ligatured and ablated. Pectineal flaps	14	C.	Large amount of serous fluid in sac. Gut but slightly congested.
Small gut reduced. Sac ligatured and ablated	19	C.	Only part of lumen strangulated, but this was deeply congested. Hæmaturia after operation from no apparent cause.
Omentum was adherent, ligatured and ablated. Sac transfixed and ligatured	28	C.	Omentum partially old and thickened. Adventitious sac also excised, with some fatty tissue.
Small gut reduced. Sac ligatured and ablated	24	C.	Gut much congested but recoverable. Fæcal vomiting.
Small gut reduced. Sac ligatured and ablated	15	C.	Gut congested.
Small gut reduced. Sac ligatured and ablated	13	C.	Lumen of gut only just occluded, and was covered with lymph and deeply congested.
Small gut reduced. Sac ligatured and ablated	13	C.	Gut deeply congested. Sac contained blood-stained fluid.
Sac ligatured and ablated	12	C.	Sac found empty at operation. Walls thick and fibrous and inflamed.
Adherent omentum ligatured and ablated. Small gut reduced. Sac ligatured and ablated	17	C.	Secondary sac contained gut. Sac possibly made by omentum.
Small gut replaced. Sac ligatured and ablated	2	D.	Small knuckle of gut intensely congested. Sac gangrenous and rotten. Patient sank and died. No P.M.

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
21	—	F.	81	R.	3 months	5 days	Enterocoele
22	Seamstress	F.	55	L.	5 years	2 days	Enteropiplocele

*b. Strangulated Irreducible.*

23	Married	F.	31	L.	12 years	Few hours	Enterocoele
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*c. Strangulated Irreducible.*

24	Married	F.	27	R.	5 years	1 week	Enterocoele
25	Married	F.	64	L.	5 days	2 days	Enterocoele

*d. Strangulated Irreducible.*

26	Married	F.	46	R.	6 months	9 days	Enterocoele
27	Widow	F.	68	R.	4 days	4 days	Enterocoele
27A	—	F.	36	R.	?	?	Enterocoele



Treatment.	No. of days in hospital.	Result.	Remarks.
Small gut replaced. Sac ligatured and ablated	3	D.	Knuckle of gut with lumen just occluded, deeply congested, but soon regained freedom. Distension. Flatus passed with enema. Sudden death. P.M.—General septic peritonitis; 7 feet from pylorus intestine black for 2 inches, and had given way by a transverse slit on lower border of intestine.
Omentum ligatured and ablated. Small gut reduced. Sac ligatured with silk and ablated. Bleeding from omental stump. Cœliotomy; re-ligature of omentum	6	D.	Gut deeply congested. Distension of abdomen. High fever; vomiting; death. P.M.—General septic peritonitis; 3 inches of small gut black, with two grey rings at seat of constriction; no perforation. Seat of strangulation not mentioned.

### *Herniotomy only.*

Stricture divided and wounded; sutured and left <i>in situ</i> . Tube inserted. Peritonitis supervened. Cœliotomy and irrigation of abdomen	3	D.	Small gut congested. P.M.—Gut involved lay 5 feet from pylorus. Suture had been inefficient, and caused leakage and general septic peritonitis.
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### *Herniotomy and Fæcal Fistula.*

Stricture divided. Gut gangrenous. Incised and left <i>in situ</i>	1	D.	P.M.—Involved gut was 3½ feet above cæcum, and lay in pelvis surrounded by fæcal matter which had escaped from incision in gut.
Stricture divided. 3 inches of gut gangrenous. Incised and left <i>in situ</i>	1	D.	P.M.—Involved gut was 9 feet above cæcum. It was doubtful if constriction had been properly divided. Constriction rings well marked. Gall-bladder contained 18 stones.

### *Herniotomy. Cortical Anus.*

Stricture divided. Gut gangrenous. Paul's tubes inserted	10	D.	Asthenia. Death. No P.M.
Stricture divided. Gut gangrenous. Paul's tube inserted	1	D.	Gut involved lay 8 feet above cæcum. Bowel gangrenous. Constriction. Rings evident. Chronic renal disease. No peritonitis.
Gut gangrenous. Stricture divided	1	D.	Death from asthenia. Seat of constriction 3 inches from cæcum. Some plastic lymph on adjacent coils. No general peritonitis. (This case not included in general tables and notes. Only came to hand when report was finished.)

*e. Strangulated Irreducible. Herniotomy.*

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia	Duration of strangulation	Structure of hernia.
28	Married	F.	56	L.	9 years	3 days	Enterocoele

## UMBILICAL

*a. Strangulated Irreducible.*

1	Cabdriver	M.	59	—	2 years	24 hours	Entero- epiplocele
2	Married	F.	46	—	20 years	24 hours	Entero- epiplocele

*b. Strangulated Irreducible.*

3	—	M.	43	—	?	5 days	Enterocoele ?
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## VENTRAL

*Strangulated Irreducible.*

1	Married	F.	37	—	7 years	12 hours	Entero- epiplocele
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## OBTURATOR HERNIA.—

1	—	F.	67	L.	?	7 days	Enterocoele
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*Resection. Circular Enterorrhaphy.*

Treatment.	No. of days in hospital	Result.	Remarks.
Stricture divided. Small gut gangrenous. $\frac{1}{2}$ inch resected. Immediate circular enterorrhaphy by continuous mucous sutures and interrupted Lembert sutures to peritoneum. No mesentery resected. Omentum ligatured and ablated. Colon returned to abdomen	7	D.	Vomiting; delirium; death. P.M.—General septic plastic peritonitis. Resection line lay $9\frac{1}{2}$ feet from pylorus and for a distance of 3 inches above the line of suture; the gut was purple and semi-necrotic. Bowel greatly distended above the suture and collapsed below. No leakage or mechanical obstruction at this point. Suture withstood water, but the inverted intestine only projected on the lumen for $\frac{1}{2}$ of an inch.

## HERNIA.

*Herniotomy and Radical Cure.*

Omentum adherent, ligatured and ablated. Small and large gut reduced. Sac ablated and stitched. Fascia and muscles stitched together with kangaroo tendon	53	C.	Several coils of small gut were present and were the part strangulated.
Omentum ligatured and ablated. Small gut reduced. Sac ablated and ligatured. Fascia stitched	16	C.	Knuckle of small gut $1\frac{1}{2}$ inches long involved and of a dark purple colour.

*Herniotomy only.*

Stricture divided. Gut reduced	1	D.	Died before completion of operation. P.M.—Knuckle of small gut involved lay 8 feet from commencement of jejunum, and was $2\frac{1}{2}$ inches in length. Condition good. No peritonitis.
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## HERNIA.

*Herniotomy and Radical Cure.*

Omentum ligatured and ablated. Small gut reduced. Sac ligatured and ablated. Fascia stitched with kangaroo tendon	29	C.	Previous cœliotomy in mid-line below umbilicus. Two sacs present; one contained small gut, which was not strangulated, and the other omentum and small gut, both strangulated.
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*Strangulated Irreducible.*

No tumour felt. Cœliotomy. Peritoneal pouch found in right obturator foramen. Patient died suddenly. Wound closed	1	D.	P.M.—Small hernia in left obturator foramen. Hernia did not reach the anterior opening. $\frac{2}{3}$ of lumen of gut only nipped. Congested but viable. (Patient was on Medical side.)
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SPECIAL TABLE II.—*Erysipelas*

No.	Sex.	Age.	Disease for which admitted.	Ward in which it arose.	Duration in hospital before attack.	Probable cause of attack.	Month.
1	F.	50	Scirrhus of breast	Elizabeth	7 days	Amputation of breast	December
2	F.	39	Scirrhus of breast	Alexandra	17 days	Amputation of breast	July
3	M.	68	Epithelioma of tongue	Clayton	23 days	Excision of tongue	December
4	M.	46	Epithelioma of tongue	Edward	19 days	Excision of tongue	October
5	M.	17	Acute necrosis of tibia	Albert	222 days	Sinus of leg	June
6	F.	48	Scirrhus of breast	Elizabeth	25 days	Amputation of breast	February
7	F.	58	Scirrhus of breast	Elizabeth	79 days	Amputation of breast	May
8	M.	24	Iliac abscess	Albert	4 days	Incision in iliac region	August
9	M.	65	Irreducible inguinal hernia	Albert	6 days	—	November
10	M.	35	Lacerated wound of leg	Albert	7 days	Wound of leg	May
11	M.	54	Lacerated wound of thigh	Albert	51 days	Wound of thigh	November
12	M.	15	Suppurating scalp wound	Leopold	3 days	Scalp wound	September
13	M.	51	Burns of hands and face	Edward	3 days	Burn of face	April
14	M.	18	Cellulitis of arm	William	9 days	Incisions into arm	October
15	M.	40	Necrosis of femur	Albert	9 days	Scraping of sinus	March
16	M.	11	Tuberculous hip	Elizabeth	7 days	Scraping of sinus	October
17	M.	38	Acute otitis	Clayton	9 days	?	February
18	F.	17	Mastoid abscess	Elizabeth	9 days	Mastoidectomy	January
19	F.	36	Cystic adenoma of breast	Alexandra	18 days	Excision of growth	September
20	F.	25	Lupus of face	Elizabeth	4 days	Excision of lupus	October
21	M.	10	Ulcer of thorax	Albert	54 days 178 days	Ulcer of thorax	November February
22	M.	23	Tuberculous glands of neck	Leopold	16 days	Excision of glands	November
23	M.	9	Tuberculous glands of neck	Leopold	6 days	Excision of glands	June



(arising in hospital).

Part where eruption first appeared.	Interval between probable cause and appearance of eruption.	Duration of attack.	Result.	Remarks.
Around wound	3 days	16 days	D.	Direct infection at operation. Temperature rose at once. Rash spread to buttock and trunk. P.M.—Lobar pneumonia.
Around wound	4 days	24 days	D.	Direct infection at operation. Wound looked unhealthy, but did not suppurate freely. Rash spread all over body. P.M.—Lungs congested at bases.
Chin	14 days ?	3 days ?	D.	Wound suppurated. P.M.—Lungs congested.
Face	3 days	4 days	D.	Wound in foul state. Secondary hæmorrhage. Lungs congested. No septic pneumonia.
Leg	?	2 days	D.	Patient went downhill quickly after erysipelas, and died probably from lardaceous disease.
Wound	19 days	3 days	C.	Wound suppurated from the first. Attack remained local.
Around wound	61 days	16 days	C.	Wound suppurated. Eruption remained local.
About wound	1 day	7 days	C.	Eruption remained local.
Face	—	4 days	C.	No operation.
Around wound	7 days	11 days	C.	Eruption remained local.
Around wound	51 days	19 days	C.	Eruption remained local.
Around wound	4 days	14 days	C.	Spread to face.
Face	3 days	20 days	C.	Spread to scalp.
Arm	8 days	5 days	C.	Remained local.
Thigh	3 days	9 days	C.	Remained local.
Thigh	4 days	15 days	C.	Spread to other leg.
Face	—	9 days	C.	} Same case.
Mastoid process	9 days	27 days	C.	
From wound	13 days	6 days	C.	Spread to axilla.
From wound	18 days	10 days	C.	Spread to face.
From ulcer	—	9 days	C.	} Same case.
About wound	—	12 days	C.	
About wound	9 days	11 days	C.	Wound suppurated. Spread over neck.
On nose	1 day	2 days	C.	Spread over face.

### SPECIAL TABLE III.—PYÆMIA, &c.

*Tetanus.*—T. S—, male, æt. 54. Depressed after a drinking bout. Incised wound in thyro-hyoid space which did not enter air-passages, while at one point the thyro-hyoid membrane was perforated as by a stab. Wounds suppurated. On the 11th day some difficulty of breathing manifested itself, and in the afternoon of the same day, while being fed by nasal tube, a spasm of the larynx occurred that necessitated laryngotomy. Trismus noted on the 12th day, while on 13th day regular tetanic spasm occurred, the muscles at the back of neck and body being also in state of tonic contraction. Risus sardonius. Mental condition good. Temperature rose to 101° F. Death from exhaustion on 14th day. P.M.—Wounds suppurating. Edema of right arytenoid epiglottidean almost sufficient to block larynx. Obsolete tubercle at left apex. Both lungs œdematous. Kidneys unusually full of blood. Brain and medulla healthy.

*Compound fracture of vertex. Tetanus hydrophobicus.*—C. M—, male, æt. 45. Tetanus hydrophobicus. Fall on to head and scalp wound 6 days previously. Stiffness of neck and inability to open jaws 3 days. Pain in jaws 1 day. Large scalp wound on right side of head reaching from 1½ inches in front of ear to the same distance behind it; suppurating at posterior extremity. Well-marked right facial paralysis. Head retracted. Muscles of neck, jaws, and abdomen rigid. Patient greatly troubled by attempts to get rid of tenacious mucus in the throat. Position semi-prone. Attacks of respiratory spasm with cyanosis. In the intervals between these attacks patient was fairly comfortable. Chloral and bromide *per rectum*. Chloroform. Laryngeal spasm that lasted after conjunctival reflex was gone, and clonic movements of arms, fingers, and legs while going under. Feeding by œsophageal tube. Scalp wound opened up and cleaned. Anæsthetic did not overcome the rigidity of jaws, so that the tube was passed through the gap in teeth. Slight clonic spasm of arms. Chloral and bromide *per rectum*. Again fed under chloroform. Laryngeal spasm again occurred and did not wholly pass off. Œsophageal tube would not pass easily, which aggravated spasm of larynx and ended in complete obstruction and cessation of respiration. Tracheotomy. Artificial respiration;

no response. Death in 20 hours from admission. P.M.—Horizontal fracture of skull at bifurcation of right middle meningeal. Artery completely divided. Extra-dural clot with diameter of 2 inches to  $\frac{3}{4}$  inch in thickness. No laceration of brain. Medulla congested on section. Spinal cord healthy to naked eye. Cretaceous nodules and miliary tubercle in both lungs. Left pleura obliterated. Other organs normal.

CLASS I.—*Admitted with the disease.*

*Abscess about gall-bladder.*—J. J—, female, æt. 44. Abdominal hysterectomy for fibroids in Adelaide 19 days before admission, when a mass in right hypochondrium was noted, and found not to be connected with the appendages. Temperature was raised considerably before the operation in Adelaide. On admission definite mass below right lobe of liver, not completely dull on percussion, but very tender. Temperature reached 104° F. Abdominal wound suppurating. On 7th day incision over tumour; gas and stinking pus evacuated. Abscess intra-peritoneal. Drainage. Temperature remained up. Thrombosis of veins of left leg. Blood-stained expectoration. Grave condition. Temperature not so high as before. Exhaustion. Death. P.M.—Wound in hypochondrium did not communicate with abdomen, intestines being non-adherent over it. Abscess in pelvis about uterine stump. Intestines matted about gall-bladder, whose walls were thick and fibrous, while the fundus presented a dark spot; on its under surface was a collection of inspissated pus. Hepatic and common duct normal. Cystic duct thickened and fibrous at neck of gall-bladder, suggesting either perforation or operation at a previous date. Abscess in liver and in lungs. Pleurisy.

*Cellulitis of thigh.*—S. W—, female, æt. 40. "Boil" on left knee 14 days previously, while the left thigh became swollen 9 days previously, being accompanied by rigors. Left parotid gland swollen for 2 days. On admission left thigh greatly swollen and boggy on the inner side. Severe constitutional symptoms. Incisions in thigh evacuated pus from fascial plexus, while a localised abscess was opened over the knee. Exhaustion. Death. P.M.—No bone disease. Serous fluid in left knee. Diffuse suppuration in left parotid gland, but no localised abscess. Lungs emphysematous, but contained no abscesses. Kidney capsules rather adherent; cortices injected. Uterine mucous membrane red and pulpy. Recent corpus luteum in ovary.

*Septic arthritis of knee.*—S. M—, male, æt. 31. Commenced 2 days previously with rigor. On admission right knee and left elbow painful. Right knee swollen and extremely tender. Temp. 104°. Death suddenly same night. P.M.—Extreme state of decomposition. Left knee-joint contained several ounces of thick green pus. Heart, liver, and lungs not grossly diseased.

CLASS II.—*Acute bone cases.*

*Acute epiphysitis of tibia.*—J. G—, male, æt. 10. Sudden onset with pain in heel and drowsiness 3 days previously, followed by a pustule on external malleolus. Admitted in grave condition, with pain over head of right tibia. Incision down to bone, which was rough. Cavity exposed, and was found to contain

brownish debris. Cavity plugged. Patient sank and died. P.M.—Periosteum stripped from shaft for space of 3 inches downwards from head of bone, and laterally over an area of 1 inch. Shaft of bone was rough. Cancellous tissue black, soft, and necrotic. No sclerosis. Diseased area abutted on the epiphysial line. Some pus was found in soft tissues to outer side of incision, but no abscess cavity found, the parts being simply dirty looking and infiltrated. Scabbed sore over right heel, the veins leading from which were normal. Innumerable small hæmorrhages beneath serous layer of pericardium. On apex of left ventricle was a small metastatic abscess. Subserous hæmorrhages in lungs. Numerous hæmorrhagic infarcts in lungs, probably septic, while beneath pleura were undoubted small abscesses.

*Acute epiphysitis of femur.*—J. W—, male, æt. 7 months. At first treated as fracture of lower end of femur in absence of any signs of acute inflammation. Admitted with a swelling on lower end of femur, lower end of radius, and humerus; all on the right side. Incisions following day. Left shoulder-joint incised and pus evacuated. Death on 3rd day. No P.M.

*Acute epiphysitis of femur.*—A. O. W—, male, æt. 5½ weeks. Ten days after birth small abscess appeared on finger. At the end of the following week another abscess appeared on right ankle, and finally a large abscess on right thigh, for which child was admitted. Incision into abscess of thigh, which led up to hip-joint. Fresh abscesses appeared on right leg, inner surface of left thigh, and in the left lumbar region, which were also incised. Death on 5th day. P.M.—Upper epiphysis of right femur separated, while the upper part of femur was devoid of periosteum. Acetabulum was also undergoing acute necrosis. Small collection of pus beneath right pectoralis major. Scattered islets of collapse in both lungs. Other organs healthy.

*Acute multiple epiphysitis.*—C. C—, male, æt. 14. Disease started 29 days previously with effusion into left shoulder. Swelling appeared over left tibia 9 days before admission, when both shoulder and leg abscesses were incised. Three days before admission shoulder again became troublesome. Admitted with distension of both knee-joints and large abscess about lower end of both femora. Swelling over head of left tibia and shoulder, both previously incised. Incisions. Both lower epiphyses of femora found affected. Abscess over tibia evacuated. Temperature remained high. Severe constitutional symptoms. Left knee explored; no pus; sutured up. Wounds irrigated. Death from exhaustion on 6th day. P.M.—Mischief entirely epiphysial; joints not affected. Minute bronchi engorged with pus. No pyæmic infarcts in lungs. No further disease.

*Acute necrosis of femur.*—F. M—, male, æt. 13. Fell and injured leg 5 days before admission. Gradually increasing pain in right thigh. Admitted with swellings over lower end of femur and over middle of radius. Right knee-joint distended with fluid. Incisions and evacuation of pus. Temperature rose to 107° F. Death. P.M.—Incisions of popliteal aspect of femur. Epiphysis not involved. Middle of shaft of radius rough and bare. Spleen diffuent. No metastatic abscesses.



CLASS III.—*Arising in hospital.*

*Fibrous ankylosis of bursa; pyæmia.*—L. A. D—, female, æt. 42. Confined 1894. Soon after birth of child, knees, wrists, and elbows became swollen. Wrists and elbows recovered mobility, but knees remained stiff in the flexed position. On admission knee flexed to nearly right angle; union fibrous. Anæsthetic; passive movement; knees fixed in extended position with plaster of Paris. Feet became œdematous; plaster removed. Splint sore over right ankle, exposing tendons. Circulation very bad in leg. Sore extended and involved ankle-joint. Limb became dusky and showed signs of incipient gangrene. Temperature slightly raised from admission, but never reached 101° F. Death on 57th day. P.M.—Anterior part of lower lobe of left lung riddled with abscesses. No sign of tubercle. Right lung contained caseous nodules at apex. Liver of enormous size and of a dead white colour; no sign of hepatic structure to be seen; extremely friable. Large bed sore over sacrum.

2. R. M—, male, æt. 52. Knocked down in the street; compound Pott's fracture, right. Antiseptics; temperature rose; continuous irrigation. Fever continued; local cellulitis. Incisions; subcutaneous abscesses in left axilla and in part of right thigh. Local wound looking well. Gradual loss of strength. Death on 20th day. P.M.—Lungs œdematous, but no secondary abscess; cortex of both kidneys thickly studded with minute abscesses; liver was fatty.

*Septicæmia.*—W. K—, male, æt. 32, carman. Patient admitted with superficial wound over left knee and inner side of left calf and on occipital portion of scalp; caused by a fall from van into road. Wound was cleaned and patient put to bed. The following day patient's condition was unsatisfactory, and on examining the limb the thigh and popliteal space were found to have extensive discoloration of skin from blood effused, and the thigh was swollen so as to suggest possible rupture of an artery, but the foot was not cold nor even the pulses at ankle absent. In the course of a few hours the patient presented symptoms of hæmorrhage with the exception of the usual restlessness. The limbs were blanched, surface cold and clammy; pulse 180, weak and running. Temperature rose to 101·6° on 3rd day, and reached to 103·6° just before death on the 4th day. P.M.—No important vessel found ruptured, but the subcutaneous tissue of thigh and popliteal space were full of watery blood-stained serum. Bacteriological examination showed presence of numerous septic organisms, including *Streptococcus* and *Staphylococcus*. Spleen very soft; endocardium much stained; blood showed little tendency to clot; organs healthy.

SPECIAL TABLE IV.—*Fractures and Dislocations treated*

BONE.	Sex.		Age.										Not stated.
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60			
DISLOCATIONS.													
<i>Lower Jaw—</i>													
<i>a. Bilateral</i> . . . . .	1	1	...	...	...	1	...	1	...	...	...	...	
<i>b. Unilateral</i> . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	
<i>Clavicle—</i>													
<i>a. Acromial extremity</i> . . . . .	4	1	..	...	1	3	...	...	1	...	...	...	
<i>Humerus—</i>													
<i>a. Subcoracoid</i> . . . . .	23	8	...	...	1	4	3	9	9	5	...	...	
<i>b. Subglenoid</i> . . . . .	5	3	...	...	...	...	2	1	3	2	...	...	
<i>c. Not stated</i> . . . . .	5	3	1	...	...	1	...	2	3	1	...	...	
<i>Radius and Ulna</i> . . . . .	21	3	...	4	16	2	2	...	...	...	...	...	
<i>Radius</i> . . . . .	6	1	2	2	2	...	1	..	...	...	...	...	
<i>Ulna</i> . . . . .	3	1	...	...	3	..	1	..	...	...	...	...	
<i>Carpus</i> . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	
<i>Metacarpus</i> . . . . .	1	...	...	..	...	...	1	...	...	...	...	...	
<i>Thumb—</i>													
<i>a. Proximal phalanx</i> . . . . .	6	2	...	1	1	2	2	...	...	1	1	...	
<i>b. Distal phalanx</i> . . . . .	...	3	...	...	...	...	1	1	..	1	...	...	
<i>Digits—</i>													
<i>a. Proximal phalanx</i> . . . . .	5	...	...	...	2	1	1	...	...	1	...	...	
<i>b. Middle phalanx</i> . . . . .	1	3	...	...	1	...	1	2	...	...	...	...	
<i>c. Distal phalanx</i> . . . . .	7	...	...	...	2	3	1	1	...	...	...	...	
<i>Nasal Bones</i> . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	
FRACTURES.													
<i>Nasal Bones</i> . . . . .	7	2	...	...	4	3	1	1	...	...	...	...	
<i>Superior Maxilla</i> . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	
<i>Inferior Maxilla</i> . . . . .	6	2	...	...	1	1	4	1	1	...	...	...	
<i>Rib</i> . . . . .	47	12	...	...	2	5	14	14	19	5	...	...	

*in Casualty Department, not admitted to Wards.*

Side of body.			Remarks.
R.	L.	Not stated.	
...	...	...	Yawning 2.
...	1	...	
1	4	...	Upwards 4.
16	15	...	Direct violence 3; indirect violence 5. Reduction under anæsthetic 6. Subclavicular 3. 2nd time 1; 3rd time 1; 5th time 1; 7th time 1. Reduction while removing coat 1.
5	3	...	Direct violence 3; indirect violence 1.
5	3	...	Direct violence 1. Anæsthetic 1.
10	14	...	Direct violence 1; indirect violence 5. Backwards 10; backwards and outwards 6; outwards 4; backwards and inwards 1; backwards and outwards 1. Anæsthetic 3. 3rd time 1. Fracture of internal condyle 1.
4	3	...	Direct violence 1. Forwards 4. Anæsthetic 1. Attempted reduction 1.
2	2	...	Backwards 3.
1	...	...	Backwards 1. Indirect violence 1.
...	1	...	Fifth metacarpal.
3	4	1	Inwards 1; backwards 4. Direct violence 1; indirect violence 1.
1	2	...	Backwards 2. Indirect violence 1. Compound 1.
2	3	...	Index 1; middle 1; ring 2. Separation of metacarpal epiphysis 1.
2	2	...	Middle 3; ring 1.
3	3	1	Index 1; ring 2; little 1. Compound 2.
...	...	...	Direct violence 1. Fracture (?) 1.
2	1	...	Double 6.
1	...	...	Compound 1.
...	6	2	Horizontal ramus by last molar tooth 2; condyle 1; symphysis 1.
32	25	2	2nd 2; 3rd 4; 4th 5; 5th 5; 6th 4; 7th 10; 8th 13; 9th 6; 10th 6; 11th 2; 12th 2; remainder not stated. Multiple 13. Separation of costal cartilage 4.

SPECIAL TABLE IV.—*Fractures and Dislocations treated in*

BONE.	Sex.		Age.									Not studied.
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60		
Fractures—continued.												
Scapula . . . .	4	1	1	...	...	1	1	...	...	2	...	
Clavicle . . . .	70	42	34	21	9	15	8	9	10	5	1	
Humerus— Shaft . . . .	61	21	11	19	25	4	6	4	9	3	1	
Separation of epiphysis . .	7	4	7	2	2	...	...	...	...	...	...	
Radius and Ulna . . .	43	13	15	13	21	...	...	1	4	1	1	
Radius— Shaft . . . .	47	27	28	10	10	5	7	6	4	4	...	
Colles' fracture . . .	20	32	...	1	6	2	7	11	20	5	...	
Separation of epiphysis . .	7	10	8	6	3	...	...	...	...	...	...	
Ulna— Shaft . . . .	12	4	3	...	7	...	1	...	3	1	1	
(1) Separation of epiphysis . .	1	...	...	...	1	...	...	...	...	...	...	
(2) Fracture of olecranon . .	6	1	...	...	...	3	3	1	...	...	...	
Metacarpus . . . .	21	10	...	2	8	4	6	6	4	1	...	
Phalanges . . . .	24	4	1	2	4	6	6	2	6	...	1	
Femur— Shaft . . . .	1	1	2	...	...	...	...	...	...	...	...	
Separation of epiphysis . .	1	...	...	1	...	...	...	...	...	...	...	
Tibia— Shaft . . . .	19	4	5	8	7	7	1	...	1	...	1	
Separation of epiphysis . .	1	...	...	...	1	...	...	...	...	...	...	
Fibula . . . .	30	17	1	3	5	13	7	11	5	1	1	
Metatarsus . . . .	1	...	...	...	...	...	...	1	...	...	...	
Phalanges . . . .	7	...	...	...	1	4	1	1	...	...	...	



*Casualty Department, not admitted to Wards—continued.*

Side of body.			Remarks.
R.	L.	Not stated.	
3	2	...	Acromial process 2; neck 1; axillary border, vertical 1; below spine obliquely 1.
63	49	...	Outer third 34; middle third 6; inner third 5; acromial end 8; between ligaments 3; greenstick 14. Comminuted 1. Separation of epiphysis 1.
33	46	3	Upper third 16; middle third 10; lower third 30; external condyle 3; internal condyle 9; external condyle into joint 3; greenstick 2; T-shaped into joint 4; intracapsular 1; fracture radius and ulna, upper third 1.
6	5	...	Upper 4; lower 7.
32	24	...	Upper third 5; middle third 12; lower third 19; greenstick 18; impacted 1; compound 1.
35	39	...	Upper third 20; middle third 9; lower third 22; greenstick 10; impacted 1; fractured ribs 1.
23	29	...	Double 1.
10	6	1	Lower 10; upper 3; greenstick of radius 1.
6	10	...	Upper third 3; middle third 4; lower third 3; compound 1; comminuted 1. Fracture of radius and ulna 2 months previously 1.
1	...	...	Lower 1.
4	3	...	
23	8	...	Index 5; middle 3; ring 9; little 10; thumb 3. Separation of epiphysis of index 1. Compound 1.
17	11	...	Index 3; middle 6; ring 5; little 8; thumb 6. Compound 6.
...	1	1	Greenstick 1. Refused admission 1.
...	...	1	Lower 1.
9	13	1	Middle third 3; lower third 12; greenstick 2. Fibula fractured 4.
...	1	...	Lower 1. Fibula, lower epiphysis 1.
22	24	1	Upper third 4; lower third 26; Pott's 2; external malleolus 5; comminuted 1.
1	..	...	3rd toe 1.
3	3	1	Great toe 6; little toe 1; compound 1; compound comminuted 1.



# REPORT OF

## THE OBSTETRICAL DEPARTMENT

### FOR 1895.

By ROBERT CORY, M.A., M.D., F.R.C.P.

THE JUNIOR OBSTETRIC HOUSE PHYSICIANS FOR THE YEAR WERE MESSRS.  
W. E. F. TINLEY, S. W. F. RICHARDSON, G. CANDLER, E. A. SAUNDERS,  
AND G. G. GENGE.

FROM the 1st of January, 1895, to the 31st of December, 1895 (both dates inclusive), 2218 women were attended. Of these, 2193 resulted in single births and 25 in twin births. There were 20 cases of abortion among the single births.

In the following table the presentations of the children are classified :

	Among the single births.	Among the twin births.	Total.
Vertex . . . . .	2107	33	2140
Breech . . . . .	47	13	60
Superior extremities, including the shoulder . . . . .	4	2	6
Inferior extremities . . . . .	8	2	10
Face and brow . . . . .	7	0	7
Abortions . . . . .	20	0	20
	2193	50	2243

Of the 2218 women attended—

326 were 1st confinements.	75 were 10th confinements.
333 „ 2nd „	44 „ 11th „
324 „ 3rd „	24 „ 12th „
267 „ 4th „	12 „ 13th „
229 „ 5th „	7 „ 14th „
196 „ 6th „	2 „ 15th „
138 „ 7th „	1 was a 16th confinement.
128 „ 8th „	24 not stated.
88 „ 9th „	2218

The following table gives the number of women confined

at each successive year of life; the youngest mother was 18 years, and the oldest 46:

At the age of	No. of women confined.	At the age of	No. of women confined.
18	... 20	34	... 92
19	... 30	35	... 61
20	... 76	36	... 67
21	... 88	37	... 61
22	... 133	38	... 58
23	... 148	39	... 55
24	... 135	40	... 36
25	... 125	41	... 25
26	... 142	42	... 25
27	... 134	43	... 16
28	... 133	44	... 6
29	... 126	45	... 4
30	... 135	46	... 2
31	... 77	?	... 24
32	... 106		
33	... 78		2218

The FORCEPS were used in 43 cases. The reasons given for their use may be tabulated as follows:

Delay during 1st stage of labour . . . . . 17	{ 5 contracted pelves. 12 inertia.
Delay during 2nd stage of labour . . . . . 26	Tedious.

There were 16 cases of primiparæ among the 43 forceps cases, and 3 cases of rupture of the perinæum are reported.

The following is a tabulated statement of the cases of PLACENTA PRÆVIA.

No.	Age of mother.	Confinement.	Sex of child.	Treatment.	Result to mother.	Result to child.	Placental position.
2778	32	6	M.	Version	R.	L.	Not stated.
3187	?	4	M.	Labour induced	R.	D.	„
3273	33	11	M.	Version	R.	Not stated	„
3557	39	11	F.	Version; shoulder presentation	R.	D.	--
115	38	8	F.	Version; craniotomy	R.	D.	—
1472	31	6	F.	Not stated	R.	L.	Partial.

CASES OF VERSION.—Podalic version was resorted to in 7 cases:

3 for presentation of the shoulder;  
4 for placenta prævia.



Four of the children were stillborn, two were living, one not stated. All the mothers recovered.

The BREECH presented in 43 among the single births, which gives a proportion of 1 in every 51·6. In 13 of these cases the children were stillborn, which is equivalent to a death-rate of 30·2 per cent.

Five maternal deaths are recorded during the year :

No.	Age.	Confinement.	Sex of child.	Result to child.	Interval between birth of child and death of mother.	Cause of death.
2741	19	1	F.	L.	6 days	Puerperal fever.
3408	30	4	F.	L.	3 weeks	Ulcerative endocarditis. Died in hospital.
278	25	1	M.	L.	A few minutes	Eclampsia.
363	36	12	M.	Stillborn	3 hours	Œdema of lung.
1019	33	7	M.	„	Immediately	Hæmorrhage.

This gives a death-rate of ·23 per cent.

OF THE CHILDREN.—The number of children born among the 2218 women attended during the year was 2243, there being 25 cases of twin births. The sexes of 2204 were 1147 males and 1057 females. The sexes of 39 are not recorded.

There were 94 stillbirths, or 1 in 23·6 labours, or 4·19 of the children were stillborn.

The characters of the labours in which the stillbirths occurred are given below.

Natural labours, including cases of intra-uterine maceration .	26
Abortions . . . . .	20
Premature births . . . . .	8
Breech presentations . . . . .	13
Twin births . . . . .	9
Funis presentations . . . . .	4
Forceps . . . . .	6
Placenta prævia . . . . .	3
Shoulder with version . . . . .	2
Malformations of fœtus . . . . .	2
Eclampsia . . . . .	1
	<hr/> 94

The following table gives particulars of the 25 cases of twin births :

No. in Maternity Book.	Age of mother.	No. of confinement.	Date of birth.	Sex.		Result to mother.	Result to children.		Presentation of children.		Condition of placenta.
				1st child.	2nd child.		1st child.	2nd child.	1st child.	2nd child.	
211	37	5	April 24	M.	M.	L.	L.	L.	Vertex	Vertex	Single; two sacs.
247	26	4	June 14	F.	M.	L.	S.	L.	"	Transverse ?	Not stated.
251	21	4	Aug. 7	M.	?	L.	L.	S.	"	"	"
303	29	5	July 13	M.	F.	L.	L.	L.	Breech	Vertex	Two placentae.
330	34	6	July 15	M.	F.	L.	S.	L.	Vertex	Breech	Not stated.
345	26	5	Sept. 8	F.	F.	L.	L.	L.	Breech	Vertex	Single.
409	25	6	July 31	M.	F.	L.	L.	L.	Vertex	Breech	Not stated.
536	35	9	July 25	F.	F.	L.	L.	L.	"	"	"
1079	25	1	Oct. 10	M.	M.	L.	S.	L.	Breech	Vertex	Two placentae.
1193	41	8	Sept. 30	F.	F.	L.	L.	L.	Vertex	"	Single.
1258	30	1	Oct. 22	M.	F.	L.	L.	L.	"	"	Not stated.
1336	36	2	Oct. 12	M.	M.	L.	S.	S.	"	Foot	Single; one sac.
1437	28	3	Oct. 20	M.	M.	L.	L.	L.	"	Breech	Single; two sacs.
1517	31	9	Oct. 23	M.	M.	L.	L.	L.	Breech	"	Two placentae.
1624	28	1	Dec. 30	F.	M.	L.	S.	L.	?	Vertex	Single.
1649	41	12	Dec. 2	F.	M.	L.	L.	L.	Vertex	"	Not stated.
2346	26	2	Feb. 6	M.	M.	L.	L.	L.	"	Footling Vertex	Single.
2738	30	3	Feb. 26	M.	M.	L.	L.	L.	"	"	"
2886	36	10	March 23	F.	F.	L.	L.	L.	"	"	"
2960	25	1	Jan. 25	M.	M.	L.	L.	S.	"	"	Single; two sacs.
2986	36	12	?	F.	F.	L.	L.	L.	"	"	Not stated.
3130	25	2	March 26	M.	F.	L.	L.	L.	Breech	"	Two placentae.
3203	34	4	April 11	M.	F.	L.	L.	L.	Vertex	"	Not stated.
3363	37	5	April 30	F.	F.	L.	L.	L.	Vertex	Transverse	Single; two sacs.
3436	23	3	May 18	M.	M.	L.	L.	L.	Breech	Vertex	Not stated.

It will be observed that out of these 25 cases of twins, 29 of the children are males and 20 females; the sex of one not being recorded.

The males exceed the females, but this is exceptional among twin births, although it is the rule among the single births.

Thus, since 1877 up to the present time there have occurred in the Maternity Department of the Hospital 36,654 single births and 405 cases of multiple births. Among the latter there were 4 cases of triplets. The sex of the children among the single births were 19,129 males and 17,525 females, and among the multiple 405 were males and 409 females.

Now in 54 cases of twin births, in which the question of hereditary transmission was inquired into, it was found that such existed in 74.09 per cent. of the cases. Of these the maternal side contributed 42.59 per cent., the paternal side only 25.92 per cent., and in 5.5 per cent. there was a history of twins on both sides. The maternal influence among these 54 cases seems therefore to predominate.

We know that anatomical peculiarities are inherited (such as supernumerary fingers), and we may therefore reasonably suppose that a female child inherits its bodily conformation from its mother.

Hence, since the maternal influence seems to predominate in the production of twins, and we may suppose that the conformation of the child's body is determined by hereditary laws, we ought to have a larger proportion of females among twin births than we find among single births, and this among these cases is apparently so.





# REPORT

## OF THE

### IN-PATIENT DEPARTMENT FOR DISEASES OF WOMEN

#### FOR THE YEAR 1895.

BY WALTER W. H. TATE, M.D., M.R.C.P.

THE report for the year 1895 has been arranged in the same manner as in previous years. It will be observed that the first four General Tables give (1) a record of the number of patients admitted during the year, with the results of treatment, (2) a general classification of the diseases from which the patients suffered, (3) the total number of abdominal sections and major operations *per vaginam* performed during the year, and (4) the causes of death in the fatal cases. The latter part of the report consists of a general review of the cases of abdominal section, followed by three Special Tables, to each of which is appended abstracts of one or more cases of particular interest. The first of the Special Tables includes operations undertaken on account of disease of the ovaries, the second those for diseases of the Fallopian tube, and the third those cases in which abdominal section was performed for diseases not comprised under the first two Special Tables.

TABLE I.

#### *General Statement of Patients in Adelaide Ward.*

Number of Beds in Ward (including small Ward)	...	...	...	21
Number of Patients in Ward, Jan. 1st, 1895	...	...	...	12
" " " Dec. 31st, 1895	...	...	...	10
" " discharged or who died during 1895:				
Cured	...	...	121	Rate per cent. 49.39
Relieved	...	...	66	26.94
Unrelieved or for other causes	...	...	33	13.47
Died	...	...	25	10.20
Total	...	...	245	100.00

Average number of days of each patient's stay in hospital—25.69.



II. DISEASES OF FALLOPIAN TUBES.												
Salpingitis . . .	12	6	6	1	2	4	4	1	2	8	2	2 cases were cured by abdominal section, 8 were relieved by rest in bed, and 2 left the hospital at their own request.
Hydrosalpinx . . .	5	3	2	1	4	1	4	1	4	1	1	All treated by abdominal section. The fatal case died from atony of the small intestine on the 6th day after the operation.
Pyosalpinx . . .	7	1	4	2	2	1	1	2	1	4	2	5 cases were treated by abdominal section, one of which died from shock 8 hours after the operation. The 2 cases unrelieved left the hospital at their own request.
Tubal gestation . . .	4	1	2	1	1	1	1	2	1	3	1	All treated by abdominal section.
III. DISEASES OF THE PELVIC PERITONEUM, CELLULAR TISSUE, &c.												
A. <i>Hæmatocele</i> .												
Intra-peritoneal . . .	5	4	1	1	1	2	3	5	1	3	1	In 3 of the cases there was a distinct history pointing to tubal gestation as the cause of the hæmorrhage. All the cases were cured by rest in bed.
B. <i>Inflammation</i> .												
Pelvic peritonitis . . .	7	4	2	1	1	4	2	2	5	2	2	2 cases followed confinement, 1 followed a miscarriage, and 1 was due to gonorrhœa. In the remaining 3 the cause was not discoverable.
Pelvic cellulitis . . .	5	2	2	1	1	4	5	3	5	3	3	of the cases followed confinement, 1 started during a menstrual period, and in 1 case the cause was not evident.
Intra-peritoneal abscesses . . .	4	3	1	1	1	2	1	3	1	1	1	1 case followed confinement, 1 was the result of a miscarriage, and in 1 gonorrhœa was the cause. 3 of the cases were treated by abdominal section, while in the remaining case the abscess burst into the rectum and the patient was cured. Removed by abdominal section.
Fibro-myoma of broad ligament . . .	1	1	1	1	1	1	1	1	1	1	1	
IV. DISEASES OF THE UTERUS AND CERVIX.												
Endometritis . . .	14	6	5	3	4	10	7	6	1	2	2	12 cases followed confinement, 3 followed abortion; in 7 of the cases the hæmorrhage was due to adenoid vegetations, and in 2 cases the cause was not evident. All the cases were treated by dilatation of cervical canal and curetting the interior of the uterus. One case terminated fatally from septicæmia.





abandoned owing to the bladder being involved in the growth. In the remaining 8 cases the disease was too far advanced for surgical interference.

In 1 case the patient was suffering from peritonitis secondary to the disease at the time of operation. The uterus was removed *per vaginam* in the hope of removing the source of infection, but the patient died from extension of the peritonitis. The case unrelieved was too advanced for treatment. Vaginal hysterectomy performed in each case.

Amputation of the cervix performed in each case.

Both cases were secondary to prolapse of vaginal walls, and in each case the cervix was amputated with satisfactory result.

In this case a firm rounded swelling, extending outwards from the cervix into the region of the broad ligament, was found, which it was thought was probably due to some congenital malformation.

Removed by operation.

The ulceration in this case was due to retained pessary.

The patient was a single woman, and the condition found was probably some congenital remains of the septum.

2 cases were treated by anterior colporrhaphy with repair of the perineum; the remaining case was treated by pessary.

The fistula was due to a Zwancke's pessary which had been retained without removal for one year and nine months.

The edges of the fistula were pared for 1 cm. round, and then brought together by buried catgut and superficial silk-worm-gut sutures.

The fistula occurred as the result of a confinement in which the breech presented, and forceps had to be employed in the delivery of the after-coming head. The case was cured by operation.

All treated by operation with completely satisfactory results.

#### Carcinoma of body of uterus

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#### V. DISEASES OF VAGINA, VULVA, &C.

##### Epithelioma of clitoris

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TABLE II—continued.

DISEASE.	Number of cases	Age.						Duration of residence.				REMARKS.			
		10-20	-30	-40	-50	-60	Above 60	Under 1 wk	1-2 weeks	2-4 weeks	1-2 months				
		Cured.	Relieved.	Unrelieved.	Died.										
VI. PREGNANCY AND ITS ACCIDENTS.															
Pregnancy . . . . .	2		1	1			2							2	
Hydramnios . . . . .	2	1	1					2					1	1	
Pregnancy complicated with fibroid tumour	1		1					1						1	
In 1 case premature delivery took place at the 7th month; in the other the patient was admitted for hæmorrhage during pregnancy, but as none occurred during her stay in the hospital she was discharged.															
As the tumour was a subperitoneal fibroid, and did not seem likely to interfere with labour, no interference was thought necessary.															
Retroversion of gravid uterus	1	1							1				1		
Uterus replaced under anæsthetic.															
Abortion . . . . .	2	1	1					2					1		1
In 1 case abortion occurred naturally at the 5th month of pregnancy; in the other case, which terminated fatally, abortion was induced on account of hæmorrhage.															
Incomplete abortion . . . . .	6	1	5					2	4				6		
All the cases were treated by dilatation, followed by removal of the retained products of conception with the finger or curette.															
Missed abortion.	1		1						1				1		
Carneous mole . . . . .	1			1				1					1		
Placental polyp . . . . .	1	1							1				1		

Decidual endometritis	2	1	1	1	1	1	1	1	1	2	In each case the decidual tissue was removed by means of the curette.
Rupture of vagina and cervix during parturition	1	1	1	1	1	1	1	1	1	1	The accident occurred while performing version in a case of shoulder presentation, complicated with placenta previa. The case was treated by abdominal section. (See Special Table III.)
Septicæmia following parturition	2	1	1	1	1	2	2	2	2	2	In 1 case a large mass of sloughing placenta was retained within the uterus; this was removed, but the condition of the patient did not improve. In the second case abdominal section was performed for relief of an intra-peritoneal abscess; there was great distension of the intestine at the time of operation, which was relieved by puncture; the condition, however, recurred, and patient died on the 3rd day after operation.
Pyæmia following parturition	1	1	1	1	1	1	1	1	1	1	
VII. VARIOUS.											
Anæmia	1	1	1	1	1	1	1	1	1	1	
Debility	1	1	1	1	1	1	1	1	1	1	
Dysmenorrhœa	4	3	1	1	1	2	2	1	3	3	3 of the cases were treated by dilatation of the cervical canal with steel sounds, after which, in 2 cases, an intra-uterine stem pessary was introduced.
Menorrhagia	3	2	1	1	3	3	2	1	1	1	Dilatation and curetting was performed in 2 of the cases. The third left the hospital at her own request.
Retro-uterine cyst	1	1	1	1	1	1	1	1	1	1	Treated by abdominal section.
Pelvic neuralgia	7	4	2	1	2	2	3	7	7	7	
Frequency of micturition	1	1	1	1	1	1	1	1	1	1	Abdominal hysterectomy for fibroids was performed in this patient on 24th Jan., 1895. The frequency of micturition was not relieved by this operation, and was completely cured by dilatation of the urethra.





TABLE III.—Operations performed during the Year.

## Abdominal section:

Cystic adenoma of ovary . . . . .	26
Papillomatous cyst of ovary . . . . .	2
Parovarian cyst . . . . .	3
Suppurating cyst of ovary . . . . .	4
Dermoid cyst of ovary . . . . .	2
Salpingitis . . . . .	2
Hydrosalpinx . . . . .	5
Pyosalpinx . . . . .	7
Tubal gestation . . . . .	2
Hysterectomy for uterine fibro-myoma . . . . .	13
Myomectomy for uterine fibro-myoma . . . . .	1
Fibro-myoma of broad ligament . . . . .	1
Hysterectomy for fibro-cystic tumour of cervix . . . . .	1

## Exploratory incision:

Intra-peritoneal abscess . . . . .	4
Rupture of vagina and cervix . . . . .	1
Retro-uterine cyst . . . . .	1
Typhlitis . . . . .	1
Tuberculous peritonitis . . . . .	1
Papilloma of omentum, intestine, &c. . . . .	1 = 9

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Vaginal hysterectomy for cancer of cervix . . . . .	8
"    "    for sarcoma of uterus . . . . .	2
"    "    for cancer of body of uterus . . . . .	1

## Supra-vaginal amputation of cervix:

(1) For cancer . . . . .	3
(2) For hypertrophic elongation . . . . .	2
Amputation of vaginal portion of cervix . . . . .	2
Polypus uteri (fibroid) . . . . .	4
"    "    (mucous) . . . . .	2
Recto-vaginal fistula . . . . .	1
Vesico-cervical fistula . . . . .	1
Ruptured perinæum . . . . .	7

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Total . . . . . 111

TABLE IV.—*Causes of Death in Fatal Cases.*

Shock and collapse after abdominal section for (1) suppurating cyst of ovary with intra-peritoneal abscess; (2) dermoid cyst of both ovaries with malignant disease of bowel, omentum, &c.; (3) double pyosalpinx and inflamed cyst of ovary with intra-peritoneal abscess; (4) sloughing fibroid tumour of uterus; (5) fibro-cystic tumour of cervix . . . . .	5
Exhaustion following abdominal section for (1) large ovarian cyst and fibroid tumour of uterus; (2) tuberculous peritonitis . . . . .	2
Peritonitis following abdominal section for (1) suppurating cyst of ovary; (2) papillomatous cyst of ovary undergoing necrotic change; (3) suppurating cyst of ovary with cellulitic abscess; (4) removal of fœtus and suppurating sac at full term in a case of extra-uterine gestation; (5) malignant papilloma of omentum, intestine, &c.; (6) fibroid tumour of uterus associated with a five months' pregnancy . . . . .	6
Atony of bowel after abdominal section for (1) hydrosalpinx with cystic ovary; (2) fibroid tumour of the uterus . . . . .	2
Hæmorrhage following abdominal section for fibroid tumour of uterus . . . . .	1
Shock and collapse following secondary abdominal section to establish anastomosis in case of fæcal fistula . . . . .	1
Peritonitis following (1) exploration of cavity of uterus in case of villous endometritis; (2) vaginal hysterectomy for cancer of cervix and cancer of body of uterus respectively . . . . .	3
Septicæmia secondary to (1) sloughing fibroid polyp of uterus; (2) induction of abortion; (3) parturition in which a piece of sloughing placenta was retained; (4) parturition with formation of intra-peritoneal abscess . . . . .	4
Pyæmia following confinement . . . . .	1
Total . . . . .	25

## ABDOMINAL SECTION, INCLUDING OVARIOTOMY.

The number of abdominal sections performed in the wards during the past year has been seventy-eight, or an increase of ten on the previous year. So far as the cases of ovariectomy are concerned they show no increase, thirty-seven cases having been operated upon in each year. It will be seen that the increase is chiefly due to the larger number of cases of pyosalpinx which have required operative treatment, and also to considerable increase in the number of cases of abdominal hysterectomy. Of the thirty-seven cases included under the first Special Table thirty-two were cured

and five died. In examining the causes of death in these cases it will be seen that in No. 9 it was due to peritonitis following the removal of a suppurating cyst of the right ovary. During the removal of the tumour the cyst burst, and its contents, which were highly offensive, escaped into the peritoneal cavity. In spite of douching the peritoneal cavity and drainage the case ended fatally on the fourth day. In case No. 12 the patient had been an in-patient ten months previously with a very large ovarian tumour associated with a fibro-myoma of the uterus. She was at that time advised to submit to operative treatment, but was unwilling to have anything done, and left the hospital. She became gradually weaker owing to the increase in size of the tumour, and also on account of severe menorrhagia from which she suffered, and on her readmission to the hospital on the present occasion was in a very feeble condition. After she had improved a little by rest and diet abdominal section was performed, and both tumours were removed. She improved a little for a time, but ultimately died from exhaustion on the thirty-second day. An abstract of this case is given. In case No. 17 the operation was extremely severe, owing to the difficulty in removing the cyst, which was suppurating and very firmly adherent to the surrounding structures. The patient died from shock two hours after the operation. In case No. 21 both ovaries were the seat of dermoid cystic disease, and in addition to this there was malignant disease of the omentum and intestine to which the cyst was adherent. During the separation of the cyst from the growth a portion of the latter was separated off the wall of the bowel, and exposed the mucous membrane. An anastomosis was established between the portions of bowel above and below the diseased part, but patient died of shock. The fatal result in case No. 22 was due to peritonitis following removal of a papillomatous cyst of the left ovary, which was undergoing necrotic change. In the fifth fatal case, No. 32, abdominal section was performed for a suppurating cyst of the right ovary, which was removed. The patient was very collapsed at the end of the operation, with pulse of 160. She rapidly got worse, and died fourteen hours after the operation. At the autopsy a

large abscess was found in the cellular tissue between the bladder and cervix, which had not been discovered at the time of the operation. In case No. 13 an enormous multi-locular cystic adenoma was removed from a patient aged sixteen. The tumour was adherent over the whole anterior abdominal wall, and the patient was extremely collapsed during and for some hours after the operation, but she ultimately got perfectly well.

Sixteen cases of abdominal section are tabulated under the second Special Table, of which thirteen recovered. The first fatal case, No. 4 in the table, occurred in a patient who was suffering from an extra-uterine gestation, which had advanced to full term, and in which death of the foetus had occurred with suppuration in the sac. The foetus and placenta were removed together with a great part of the sac; the peritoneal cavity was then douched and drained, but patient died twenty-eight hours after the operation. A full abstract of this case will be found at the end of the table. In case No. 8 the fatal result was due to shock following a very severe operation for the removal of a double pyosalpinx associated with an inflamed cyst of the ovary with an intra-peritoneal abscess. The operation was extremely difficult owing to the dense adhesions to the bladder, rectum, and broad ligament, and it was found impossible to complete the separation of the pyosalpinx on the left side owing to the serious condition of the patient. A drainage-tube was therefore inserted, and the abdominal wound closed as rapidly as possible. The patient survived the operation only for eight hours. The other four cases of pyosalpinx which were operated upon recovered without any bad symptoms. In the third fatal case, No. 14 in the table, death occurred from atony of the bowels on the seventh day after an abdominal section for removal of a hydrosalpinx on the right side, together with an inflamed Fallopian tube and cystic ovary on the left side. Patient's condition was quite satisfactory till the fourth day, when sickness with distension of the abdomen commenced; the distension gradually increased, and patient got rapidly collapsed on the sixth day. The highest temperature after the operation was  $99^{\circ}8'$  on the second day, and for the twelve



hours before death it was subnormal. At the autopsy the whole of the small intestine was greatly distended, but there were no signs of peritonitis, and the ligatures surrounding the pedicle on each side were in a healthy condition.

In Special Table III twenty-five cases are included, of which fourteen were cases of abdominal hysterectomy. In one further case the operation of myomectomy was performed for the relief of a patient with subperitoneal fibroid tumour of the uterus. Fifteen operations in all, therefore, have been performed for the treatment of fibro-myomatous disease of the uterus, and it will be noticed that in no case has the operation of oöphorectomy been selected. It has been considered that although the operation of removal of the uterine appendages has given fairly good results on the whole in selected cases, yet the immediate results are not uniformly satisfactory, and in a few cases operation has failed to relieve the patient. An attempt has always been made to remove the whole uterus with the tumour in all cases where operative treatment has been decided upon, and in each case it has been found possible to effect this. In all the operations the intra-peritoneal method of treating the uterine stump was the plan adopted. The causes of death in the five fatal cases were as follows : in case No. 6 the operation was performed for the removal of a large sloughing fibro-myoma which was everywhere adherent to the surrounding intestines and omentum, and which had ulcerated through into the bowel by means of three or four fistulous openings. The operation was necessarily extremely severe, and patient died of shock twenty-four hours after the operation. In the second fatal case, No. 18, the fatal termination was due to shock following removal of a large fibro-cystic tumour growing from the cervix, in which very extensive enucleation was required for the removal of the tumour. In case No. 21 the patient died on the fourth day after the operation, and at the autopsy the pelvis was found to contain about one pint of dark fluid blood, which had gradually escaped from the right ovarian artery, the pedicle on the right broad ligament having become somewhat loosened. There were no symptoms following the operation

which indicated any hæmorrhage of sufficient extent to justify reopening the abdomen. In case No. 22 the operation was performed for the removal of a fibroid tumour of the uterus associated with pregnancy which had advanced to the fifth month. Death occurred on the fourth day from peritonitis. In the last fatal case, No. 24 in the table, death was due to atony of the bowel, which began at the end of forty-eight hours and ended fatally on the fourth day.

Detailed reports are given of three cases of special interest in this table. In the first of these, No. 1, an exploratory laparotomy was performed in the case of a patient admitted for rupture of vagina and cervix during parturition. In the second case, No. 4, abdominal hysterectomy was performed in a patient who also suffered from an inflammatory condition in the neighbourhood of the gall-bladder. The case gave rise to considerable difficulty in diagnosis, and was subsequently transferred to the Surgical ward for further treatment. The third case recorded is No. 22. In this case a large fibroid tumour of the uterus was associated with a pregnancy which had advanced to the fifth month. The case is of interest as showing that the operation of abdominal hysterectomy may be performed where pregnancy exists without fear of dangerous hæmorrhage, even where the stump is treated by the intra-peritoneal method.

The use of the drainage-tube during the past year has been even less frequent than in the preceding year. Whereas it was used in 20 per cent. of the cases included in Special Tables I and II in 1894, in the present year it was used only in 11 per cent. of the cases. The douche, on the other hand, has been used rather more frequently; thus, whereas in 1894 it was used in 20 per cent. of the cases, in the present year it has been employed in 36 per cent.

It is difficult yet to determine the advantage gained by suturing the aponeurosis covering the rectus abdominalis muscle with a buried catgut suture. Few, if any, patients have presented themselves at the hospital on account of hernia, in which this method of suturing the abdominal wall has been adopted, but it is too early to give any

figures of sufficient accuracy to have any practical value. It may be mentioned that of the seventy-eight cases in which abdominal section was performed the rectal aponeurosis was united by means of a special suture in fifty-six cases. In the cases in which it was not employed the patient's condition made the prolongation of the operation undesirable, or it was found necessary to employ drainage, and on that account the suture was omitted.

SPECIAL TABLE I.—*Abdominal Section for Ovarian or Broad-Ligament Tumours.*

Name.	Residence.	Age.	Civil condition.	Date of operation.	Nature, &c., of tumour.	Adhesions.	Condition and treatment of other ovary.	Glass drainage tube.	Peritonium flushed.	Result.	Remarks.
1 J. C.	Aberyst- with	56	W.	1894 Dec. 13	Multilocular cystic adenoma of right ovary, adhesions weighing about 50 lbs. between tumour and anterior abdominal wall	Firm old	Normal	No	Yes	R.	The tumour had been present for at least 6 years, and the patient had been tapped 16 times before her admission. She made an excellent recovery after its removal. Normal convalescence.
2 R. W.	Egham	27	M.	Dec. 20 1895 Jan. 3	Unilocular cyst of right broad ligament with intra-cystic growth; twisted pedicle Multilocular cystic adenoma of left ovary with twisting of pedicle; intra-cystic hæmorrhage	None Recent adhesions over whole anterior surface of cyst	Both ovaries normal Normal	No No	No No	R. R.	Normal convalescence. Patient got up on the 14th day after operation, and made an uninterrupted convalescence.
4 E. C.	Camberwell	54	M.	Jan. 10	Multilocular cystic adenoma of right ovary	None	Normal	No	No	R.	Normal convalescence.
5 M. P.	Green Twicken- ham	49	M.	Jan. 17	Multilocular cystic adenoma of left ovary	None	A little enlarged owing to presence of small cysts which were punctured	No	No	R.	Patient made an excellent recovery. Temperature only once reached 100°, viz. on the night of the operation.
6 A. D.	Horley	64	M.	Feb. 1	Inflamed and adherent ovarian cyst	Firm old adhesions of bowel to anterior	See "Remarks"	No	No	U.	Patient was operated upon in Adelaide Ward on 12th July, 1894, and a papillomatous tumour of the left



7	E. W.	Bishop's Stortford	32	S.	Feb. 14	Cystic adenoma of left ovary	None	One or two small cysts present punctured with scalpel	No	Yes	R.	ovary was removed. Four months later she was read- mitted for difficulty in pass- ing water, caused by the presence of a second tumour filling up pelvis. Owing to extensive adhesions and the feeble condition of the pa- tient it was thought inad- visable to attempt removal. Convalescence was somewhat delayed by phlebitis of the left leg, which began about the end of the second week. The pain and swelling had quite disappeared by the 9th March, and patient was able to get up on the 10th March.
8	M. L.	Uxbridge Road	43	M.	March 14	Cystic adenoma of left ovary; subperitoneal fibroid of uterus	Slight adhesions to great omentum	Contained a small cyst, which was punctured	No	Yes	R.	The small subperitoneal fibroid was enucleated, and the edges of peritoneum brought together by 3 silk sutures. Patient made an excellent recovery. The cyst burst during its removal, and its contents, which consisted of very offensive pus, escaped into the peritoneal cavity. Patient suffered severely from shock after the ope- ration, and died on the 4th day from peritonitis.
9	M. O.	Laurel Road	25	M.	March 19	Suppurating cyst of right ovary, secondary to salpingitis	Firm adhesions to the omentum and pelvic wall	Normal	48 hours	Yes	D.	
10	C. K.	Beckenham	56	W.	April 11	Cystic adenoma of both ovaries; left hydro- salpinx	None	See "Nature of tumour"	No	No	R.	Normal convalescence.

No.	Name.	Residence.	Civil age & con- dition	Date of operation.	Nature, &c., of tumour.	Adhesions.	Condition and treatment of other ovary.	Glass drainage tube.	Perito- neum flushed.	Result.	Remarks.
11	L. H.	Lambeth	35 M.	April 23	Multilocular cystic ad- noma of left ovary; rupture of cyst with secondary ascites	Firm old adhesions in pelvis	Normal	No	Yes	R.	Suffered much from shock after the operation, and later on sickness was a troublesome symptom. An enema was given on the 3rd day with very poor re- sult, after which castor oil and sulphate of magnesium in one-drachm doses every hour were tried without result. Patient was very much distended, but on the 4th day the bowels were relieved by an enema, and all the previous distension disappeared.
12	B. D.	Kenning- ton	52 W.	May 2	Large cystic adenoma of left ovary weighing 24½ lbs.; fibro-myoma of uterus weighing 1 lb. 14 oz.; ascites	None	Normal, but removed	No	No	D.	Ovariectomy and abdominal hysterectomy was per- formed in this case. See Abstract.
13	K. B.	Devon	16 S.	May 3	Enormous multilocular cystic adenoma of left ovary weighing nearly 80 lbs.	Extensive adhesions over whole anterior abdominal wall	Normal	No	Yes	R.	Patient was tapped 3 times before admission, and was in an extremely feeble con- dition at the time of opera- tion. She was extremely collapsed after the opera- tion, and brandy and strych- nine had to be administered by hypodermic injection. She, however, gradually rallied, and made an ex- cellent recovery.

14 E. K.	Walworth	42	M.	May 16	Cystic adenoma of the right ovary	None	Normal	No	No	R.	
15 E. R.	Wendron, Cornwall	55	S.	May 30	Multilocular cystic adenoma of the left ovary; rupture of one large loculus; small sub-peritoneal fibroid	Firm adhesions to omentum, and also a broad band of adhesion to anterior abdominal wall	Small and atrophic	No	No	R.	
16 S. L.	Luxted, Kent	63	M.	June 13	Multilocular cystic adenoma of left ovary, weighing 7½ lbs.	Firm adhesions to sigmoid flexure and to broad ligaments	Normal, but adherent	No	Yes	R.	
17 S. B.	Tooting	46	M.	June 20	Suppurating cyst of right ovary, secondary to salpingitis; intra-peritoneal abscess	Very firm adhesions to omentum, intestine, and pelvic wall	Not distinguished	Yes	Yes	D.	
18 E. H.	Camden Town	36	S.	July 4	Small inflamed cyst of left ovary	Few adhesions to the surrounding parts	Normal, but adherent	No	No	R.	

Patient made an uninterrupted recovery. Temperature only once reached 100° on the evening of the 2nd day after operation.

Normal convalescence.

There was a very broad pedicle to the tumour in this case, owing to the cyst having burrowed between the layers of the broad ligament, and it had to be tied in four sections. Patient made an excellent recovery.

The operation was extremely severe owing to the character of the adhesions, and the difficulty in removing the cyst. Patient died from shock 2 hours after the operation.

Normal convalescence.

No.	Name.	Residence.	Age.	Civil condition.	Date of operation.	Nature, &c., of tumour.	Adhesions.	Condition and treatment of other ovary.	Glass of drainage tube.	Peritoneum flushed.	Result.	Remarks.
19	M. M.	Clapham	34	M.	July 11	Suppurating cyst of the left ovary, measuring 3 inches in diameter, secondary to salpingitis	Recent adhesions to omentum; firm old adhesions to back of pelvis and rectum	Normal, but adherent	No	Yes	R.	Patient made an uninterrupted recovery. Highest temperature 100.2° at 12 midnight on the 2nd day.
20	E. C.	Bishop's Stortford	32	S.	July 16	Multilocular cystic adenoma of left ovary, weighing 12½ lbs.	Adhesions to sigmoid flexure and broad ligaments	Not described	No	No	R.	The operation was somewhat troublesome owing to the lower part of the tumour having burrowed between the layers of the broad ligament, and requiring to be enucleated therefrom. The patient made an excellent recovery. See Abstract.
21	E. R.	Wandsworth	51	M.	July 25	Dermoid cyst of both ovaries, associated with malignant disease of bowel and omentum	Adhesion of left cyst to back of uterus; firm adhesions of right cyst to broad ligament and bowel	See "Nature of tumour"	No	No	D.	
22	E. M.	Camberwell	47	M.	Aug. 1	Papillomatous cyst of left ovary; ascites	Firm adhesions to omentum	Normal	No	No	D.	The inner surface of the cyst showed evidence of acute inflammation, and extensive necrotic change had occurred in the intracystic growth. The cyst wall was very friable, and was torn in many parts during removal of the



23	A. M.	Walworth	48	M.	Aug. 2	Cystic adenoma of left ovary	Firm adhesions to omentum	Cirrhotic, but otherwise normal	No	Yes	R.	tumour. Patient was extremely weak after the operation, and died on the 8th day from peritonitis. The urine was found to contain 24 grs. of sugar to the ounce before the operation. The wound healed by first intention, and the patient made an excellent recovery. There was no diminution in the amount of sugar after the operation.
24	C. H.	New Cross	45	M.	Aug. 2	Multilocular cystic adenoma of right ovary	Adhesions to the anterior abdominal wall	Contained a small cyst, which was ruptured	No	No	R.	Normal convalescence.
25	F. L.	Harrow Road	23	S.	Aug. 15	Perovarian cyst of right side; twisted pedicle	None	Normal	No	No	R.	Uninterrupted recovery.
26	F. A.	Lambeth	30	M.	Aug. 20	Broad ligament cyst on right side; dermoid cyst of left ovary	Few adhesions of the right cyst to posterior surface of uterus	See "Nature of tumour"	No	No	R.	Patient had a normal convalescence.
27	E. H.	Newington Butts	38	M.	Sept. 10	Cystic adenoma of both ovaries; ascites; tumour of rectum (? carcinoma)	Some adhesions to sigmoid flexure	See "Nature of tumour"	Gauze plug for 18 hours	No	R.	After removal of tumours it was found that the rectum was infiltrated with malignant growth, to which the tumour had been adherent. Patient's convalescence was protracted owing to pain and tenderness in right shoulder, with enlargement of the lymphatic glands above and below the clavicle, together with bronchitis. She left the hospital greatly improved in health on 11th October.

No.	Name.	Residence.	Age.	Civil condition.	Date of operation.	Nature, &c., of tumour.	Adhesions.	Condition and treatment of other ovary.	Glass drainage tube.	Peritonium flushed.	Result.	Remarks.
28	E. S.	Leamington	30	M.	Sept. 12	Multilocular cystic adenoma of right ovary, weighing 12 lbs.	None	Not described	No	No	R.	Patient made an uninterrupted recovery.
29	E. W.	Lambeth	21	M.	Sept. 12	Intra-ligamentous cyst of right ovary	Very few to surrounding parts	Normal	No	No	R.	An effusion of blood developed in the situation of the right broad ligament, which somewhat delayed convalescence. She was able to get up on the 7th October, and was discharged on the 24th October.
30	E. M.	Wandsworth	48	M.	Sept. 19	Multilocular cystic adenoma of left ovary	Firm adhesions to back of uterus, intestines, and pelvic wall	Normal, but bound down by adhesions in the pelvis	No	No	R.	Patient made an uninterrupted recovery.
31	E. B.	Deptford	35	S.	Sept. 26	Multilocular cystic adenoma of left ovary	None	Normal	No	No	R.	Patient was much troubled with sickness for a week after the operation, and was slightly jaundiced. There were, however, no distension and no intestinal symptoms, and patient made an excellent recovery.
32	E. P.	Putney	30	M.	Oct. 11	Suppurating cyst of right ovary secondary to chronic salpingitis; abscess in cellular tissue between bladder and cervix	Very firm old adhesions to the surrounding structures	Normal	No	No	D.	See Abstract.

33	E. L.	Wimbledon 46	M.	Oct. 31	Papillomatous cyst of the right ovary	Very firm adhesions to back of uterus and to pelvic wall	Normal, but removed	No	No	R.	Patient made an uninterrupted recovery.
34	E. B.	Southborough	54 M.	Nov. 7	Cystic adenoma of right ovary, with intra-cystic growths	Few adhesions to surrounding parts	Normal	No	No	R.	Normal convalescence. Highest temperature 99.6° on the 3rd day after operation.
35	M. L.	Battersea	52 W.	Nov. 14	Multilobular cystic adenoma of left ovary; intra-cystic hemorrhage; weight of tumour 21½ lbs.	Recent adhesions to parts around and to the bladder	Normal	No	No	R.	Normal convalescence.
36	L. G.	Kilburn	28 M.	Nov. 14	Multilobular cystic adenoma of right ovary; twisting of pedicle	Old adhesions to omentum and bowel	Normal	No	Yes	R.	Patient had a normal convalescence. Highest temperature 99.6° on evening of 2nd day.
37	E. C.	Ramsgate 19	S.	Nov. 29	Multilobular cystic adenoma of left ovary	None	Normal	No	No	R.	Normal convalescence.

CASE 12. *Multilocular cystic adenoma of left ovary associated with fibro-myoma of uterus and ascites with chronic renal disease ; abdominal section ; removal of both tumours ; death from asthenia on the thirty-third day after operation* (from notes by J. E. FAIRBAIRN).—B. D—, æt. 52, widow, residing at Kennington, admitted 24th April, 1895, died 3rd June, 1895.

Menstruation began at age of sixteen, regular, lasting two or three days. Married at the age of nineteen ; five children, no miscarriages. The last child was born about twenty years ago, after which patient was regular for three years, but since then has had irregular hæmorrhages about every fortnight with occasional floodings up to the present time. Two years ago the floodings were very frequent, and she has had to lead a very quiet life for fear of bringing them on. She first noticed a tumour in the abdomen twelve years ago. She was admitted to Adelaide Ward first in July, 1894, and was then extremely ill and anæmic with enormous distension of the abdomen, which was specially prominent to the left of the middle line. The tumour filled up the whole abdomen from the pubes to the ensiform cartilage ; and deeply seated to the right of and behind the tumour could be felt another swelling, which was firmer and more solid feeling. The diagnosis on this occasion was fibroid tumour of the uterus, which was the cause of the menorrhagia, in addition to which there was a large cystic swelling, which was either an ovarian cyst or a renal tumour. After the patient had gained a little strength by rest and feeding in the hospital, she was advised to submit to operative treatment ; this, however, she refused to do, and shortly after she left the hospital. After her discharge she remained fairly well for about three months, but in October, 1894, she had a severe flooding, which lasted two or three days. She became very anæmic after this, and had to keep in bed for six weeks, and she has never regained her natural colour since. Two months ago she began to notice that her abdomen was still further increasing in size, and her legs also began to swell during the day. Her breathing has also been much distressed, especially at night, owing to the distension of her abdomen, and with the increased size of her abdomen she has noticed that she has passed less urine.



On admission, patient is an extremely anæmic, sallow-looking woman, complaining of great distension of the abdomen and difficulty in breathing. The abdomen is enormously distended with bulging in the flanks, especially on the left side. There is a hernial protrusion of the umbilicus measuring four inches across, which contains free ascitic fluid. There is a tumour to be felt on palpation, but its limits are not easily made out, owing to the distension of the abdomen with ascitic fluid. A well-marked fluid thrill can be obtained over all parts of the abdomen, which is everywhere dull on percussion. The greatest circumference of the abdomen is at the level of two inches above the umbilicus, and is fifty-one inches. The legs and also the abdominal wall are œdematous. The urine is acid, sp. gr. 1010; contains a trace of albumen and urates, no sugar.

As the patient was greatly distressed in her breathing owing to the distension of the abdomen, it was thought best to aspirate the abdomen in order to relieve the patient prior to any more serious operation. This was done on the 27th April, and about twelve pints of straw-coloured fluid were removed.

April 29th.—Patient is somewhat easier since the tapping, though the cough is still troublesome. Rhonchi are to be heard all over the chest, and crepitant râles at both bases.

May 2nd.—Patient's cough is easier. She sleeps better, and her general condition has somewhat improved.

*Abdominal section* (May 2nd).—Incision three inches long in middle line from umbilicus downwards towards the pubes. On opening the peritoneum about  $5\frac{1}{2}$  pints of ascitic fluid escaped, and then the opaque white surface of the cyst presented itself everywhere free from adhesions. A Spencer Wells trocar was plunged into the cyst, and a large amount of greenish-yellow viscid fluid flowed slowly through the tube. As soon as the cyst was sufficiently collapsed it was brought outside the abdomen, its pedicle was transfixed and tied in two portions, and the tumour was removed. The total amount of fluid in the cyst was  $17\frac{1}{4}$  pints.

The abdomen was now further explored, and the uterus,

which had previously been lying quite over to the right side, was now found in the middle line, and to be the seat of a fibro-myomatous tumour. As this was the cause of the patient's menorrhagia, it was thought best to remove it. The abdominal wound was first enlarged to  $6\frac{1}{2}$  inches total length. The uterine tumour having been brought out of the wound, two sutures were passed through an opening made low down in the left broad ligament, and the broad ligament including the ovarian artery tied in two places and divided between. The uterine artery on the left side was now searched for, and ligatured with a stay-knot. The same process was then repeated on the right side. Two curved incisions were now made over the anterior and posterior surface of the tumour through the capsule of uterine tissue down to the surface of the fibroid; the latter was then shelled out of the lower part of the uterus without much difficulty. The stump was now pared with a scalpel, so as to leave only thin flaps, with the patent cervical canal cut across in the centre. The two flaps were then brought together by ten silk sutures introduced after Lembert's method, in this way closing over the cervical canal and the raw surface of the stump. The abdomen was now cleansed with marine sponges, and everything being secure, the wound was closed by means of thirteen deep silkworm-gut sutures, a continuous catgut suture being used to bring together the edges of the aponeurosis covering the rectus muscle. Considering the condition of the patient at the beginning of the operation, she experienced a wonderfully small amount of shock.

The ovarian tumour removed is an ordinary multilocular cystic adenoma of the ovary, weighing nearly twenty-five pounds. The Fallopian tube and mesosalpinx are normal, but elongated, the former measuring  $6\frac{1}{2}$  inches long. The fibroid tumour measured  $5\frac{1}{2}$  by  $4\frac{3}{4}$  by 6 inches. It is an interstitial fibroid growing in the anterior wall of the uterus, and a cap of hypertrophied uterine tissue is seen covering the upper part of the tumour. The lower aspect of the tumour presents a smooth convex surface where it has been shelled out of the lower segment of the uterus. Cystic degeneration is seen in some parts of the fibroid.

May 3rd.—Patient was very sick and faint at 9 p.m. on the evening of the operation, and again this morning. She passes very little urine, but is constantly passing flatus with a little faecal matter. There is a considerable amount of vaginal discharge.

4th.—No more sickness since last note. Patient is decidedly better. The vaginal discharge is moderate. A small ecchymosis appeared for the first time just over the sacrum.

9th.—Patient has been gradually gaining strength since the last note. During the last three days there has been slight loss of control over the rectum. The sore on back is dressed with chlorinated soda lotion. All the stitches except three were removed to-day; the edges of the wound gaped somewhat, and looked unhealthy. The vaginal discharge is now very slight. Temperature has varied from  $98.4^{\circ}$  to  $101.6^{\circ}$ .

13th.—Temperature on the last two nights reached  $103.8^{\circ}$  and  $101^{\circ}$ . The sore on the sacrum is covered by a yellowish slough, which is beginning to separate. Patient's general condition is not so satisfactory.

15th.—The remaining stitches were removed to-day, and the wound packed with iodoform gauze. The temperature, which during the last two days has varied between  $99^{\circ}$  and  $101.2^{\circ}$ , has to-day remained normal. There is a trace of albumen in the urine, and the loss of control over the rectum continues.

18th.—There is now a distinctly purulent discharge from the vagina. Patient is fairly well in herself, but rather apathetic.

21st.—The vagina is douched with creolin twice a day, as the discharge is very offensive. Patient has developed a bed sore over the right tuber ischii.

25th.—The abdominal wound is looking much better, and the bed sores are healing. The vaginal discharge is still profuse, and the general condition remains about the same.

27th.—Patient has been somewhat rambling of late. The temperature has rarely been above  $99^{\circ}$ , though on the 19th and 26th inst. it reached  $100.6^{\circ}$  and  $101.8^{\circ}$  respectively.

29th.—The slough has almost entirely separated from the bed sore. The vaginal discharge has much decreased.

30th.—To-day the bed sore shows a tendency to spread. Patient has taken a distaste for her food, and does not seem so well.

June 1st.—Patient is getting weaker; she has lost her appetite and is delirious at night.

3rd.—Patient is evidently failing rapidly. She takes very little food, and is very reluctant to take even a small amount of nourishment. She is now in a condition of low muttering delirium, trying to get out of bed. Tongue is glazed, and the lips are dry and covered with brown scales. Diarrhœa with incontinence of fæces is now present.

*Autopsy.*—A large, deep bed sore lay over the sacrum, 6 by 4 inches, partly exposing the bone. After opening the abdomen the parietal peritoneum was found hard and white from chronic inflammation, but there was no recent peritonitis. On looking down into the pelvis there was seen a body having roughly the size and shape of a rather large uterus, slung across the pelvis by attachments on either side, and the upper part of this body showed a row of sutures still intact everywhere except at the right end, where inspissated pus could be made to issue through a small opening. On making a section antero-posteriorly through this body it was found to consist of two chambers, the upper one being distended with inspissated pus, communicating by a narrow, sinuous passage with the lower cavity, which was evidently the dilated cervical canal. The upper cavity was a chronic abscess that had formed under the peritoneal flaps. The liver was fatty and in a condition of early cirrhosis. The kidneys were large; the capsules and surface normal; cortex swollen, mottled, yellowish white, in marked contrast to the deep red pyramids.

CASE 21. *Dermoid cyst of both ovaries, associated with and adherent to a malignant growth of bowel and omentum; abdominal section; death from shock twelve hours after the operation* (from notes by F. Page).—E. R—, æt. 51, married, residing at Wandsworth Common, admitted 20th July, 1895; died 26th July, 1895.



Menstruation began at the age of sixteen ; at first regular, after twenty began to be irregular. She married when twenty-seven years old, and had her first child a year later. Soon after its birth she noticed a lump in her right side low down, and over the right iliac fossa. It increased in size, and was at times very troublesome and painful. About four and a half years after the birth of her first child she had her second, but the lump in the right side did not increase in size. She does not remember when the second lump in her left side appeared, but she knows it has been there for several years. Between her confinements she occasionally suffered from acute attacks of pain. Her third confinement took place about five years after the second, and on this occasion the doctor found some difficulty owing to the tumours being in the way of the child. Convalescence was quite normal after this confinement, and menstruation continued regularly though accompanied by pain till four years ago, when it gradually ceased. During the last four months she has occasionally suffered from a slight offensive discharge, and has experienced a burning pain on micturition. Since the last confinement she has noticed a gradual increase in size of the tumour.

On admission the abdomen is somewhat enlarged, the increase in size being greater on the right side than the left. In the upper and left part can be felt a hard nodular mass, somewhat tender on manipulation. The main tumour which fills the abdomen is soft and elastic, though no distinct fluctuation can be made out. The tumour extends to a height of  $9\frac{1}{2}$  inches above the pubes. The greatest circumference of the abdomen is 37 inches, and is just below the umbilicus. On vaginal examination the cervix projects normally into the vagina. Immediately above the posterior fornix can be felt a soft solid mass, which receives a direct impulse when pressure is made on the abdominal tumour. The uterine sound passes the normal distance. The fundus uteri can be felt behind the symphysis pubis, and there appears to be some movement of the uterus independently of the large mass behind it, but the latter is probably either adherent to it or an outgrowth from it.

*Abdominal section* (July 23rd).—Incision in the middle line between the umbilicus and pubes. After opening the peritoneum the tumour presented in the wound, and was felt to be cystic in the upper part, and on further examination was found to be adherent to the back of the uterus. The incision having been enlarged, some adhesions at the left and upper part of the tumour were separated, and the latter was drawn out through the wound. A firm band was now separated at the posterior aspect of the tumour, and a lobule of the tumour was then found dipping down into the pelvis, and adherent to the back of the uterus and broad ligament. During the separation of this some soft caseous material exuded. The pedicle of the tumour being now brought into view, it was transfixed, tied in two portions, and divided on the distal side of the ligature. The pedicle which was formed by the left broad ligament was now replaced in the abdomen. A tumour was now felt in the right iliac fossa, which was somewhat fixed to the surrounding parts by firm organised adhesions. The adhesions having been separated, the tumour was found to be the diseased ovary on the right side, which was then removed in the usual way. The parts to which the tumour had been adherent were now further examined, and the bowel was seen to be adherent in two or three places to a mass of irregular growth having the appearance of carcinoma, which had also been adherent to the tumour removed, and which was found to have involved the inner wall of the bowel. At this stage in the operation Mr. Clutton was consulted, and he decided to make a lateral anastomosis by means of Murphy's button, and then to leave the carcinomatous portion of the bowel outside the abdomen, to be treated subsequently by excision. This having been completed, a piece of glass rod was thrust through the mesentery, so as to prevent the diseased portion of the bowel from slipping back into the abdomen. The edges of the wound were now approximated by means of silkworm-gut sutures, leaving an opening through which the bowel protruded. The exposed portion of bowel was covered with green protective and cyanide gauze, and the patient, who was in an extremely collapsed condition, was put back to

bed. She never rallied from the shock of the operation, and died about eighteen hours later.

The parts removed consist on the left side of a dermoid cyst of the left ovary about the size of a child's head, with two secondary cysts situated in the pelvis. The outer surface of the cysts is roughened in parts owing to torn fibrous adhesions, and on the wall of the larger cyst is an irregular surface where the bowel was adherent, which is infiltrated with new growth. The cysts contain a mass of soft cheesy material with numerous short hairs, and about a pint of yellowish-brown gruel-like fluid. The cyst removed from the right side measures  $4 \times 3\frac{1}{2} \times 2\frac{1}{2}$  inches; its outer surface is rough and everywhere covered by fibrous adhesions. On laying open the cyst it is seen to consist of one main cyst with contents resembling lard. A number of short hairs project from the interior of the cyst, and two or three secondary cysts project into the interior of the main cyst. A mass of infiltrated omentum was also removed at the time of the operation.

*Autopsy.*—The coils of intestine which protruded through the abdominal wound measured eight inches in length. The proximal end of the coil was eight and a half feet from the pylorus. The growth commencing in the mesentery appeared as a mass of soft, white, malignant growth, about the size of a Tangerine orange, and had penetrated the lumen of the bowel in two places. The anastomosis had been accomplished immediately beneath the abdominal wall by means of Murphy's button; there were already a few adhesions in this situation. On opening the abdomen there were no signs of peritonitis, though the peritoneum was somewhat shaggy owing to the breaking down of adhesions at the time of the operation.

The uterus was normal in all respects, and the tube and broad ligament were seen on either side forming the pedicle, from which the tumour had been removed. There was no evidence of further malignant disease anywhere. The other organs were normal.

CASE 32. *Suppurating cyst of the right ovary, secondary to chronic salpingitis; abdominal section; hyperpyrexia; death*

(from notes by H. F. Gervis).—E. P., æt. 30, married, residing at Putney, admitted 30th September, 1895, died 12th October, 1895.

Menstruation began at the age of fourteen, regular, twenty-eight-day type. She married eight years ago, and has had three children and no miscarriages. The first two confinements were quite normal, and she had no trouble at all during convalescence. The third and last confinement took place six weeks ago, *i. e.* on the 17th August, and so far as the actual delivery was concerned she had a better time than on the previous two occasions. She has, however, suffered from pains in the abdomen ever since, especially on the right side, which began on the day following parturition. Although she still had pain she got up on the tenth day, but felt quite unfit to attend to her household duties. At the end of the third week she went to the hospital for women in Waterloo Road as she was still feeling ill; she attended there twice, and as she did not seem to improve, she was recommended by her doctor to apply for admission to St. Thomas's Hospital.

On admission, patient is seen to be a pale ill-looking woman, complaining of pain in the right side of the abdomen. The lower half of the abdomen is a little more prominent than normal. A swelling can be felt in the middle line, reaching  $4\frac{1}{2}$  inches above the symphysis pubis, and measuring  $4\frac{1}{2}$  inches in width. This swelling is dull on percussion, but no fluctuation can be detected over it. The urine is acid, contains no albumen, but deposits of urates. The temperature on admission is  $101\cdot8^{\circ}$ , with pulse 96.

October 1st.—The anterior wall of the vagina is felt to be depressed by a swelling of varying consistence, being harder on the right than on the left side. The os uteri is found behind this swelling, the cervix being obliterated. The part of the supra-pubic swelling which lies to the left of the middle line is seen to be formed by the already somewhat enlarged uterus. The mass to the right of the middle line is formed by the contents of the pelvis matted together in a hard irregular mass, in parts of cartilaginous consistence, reaching upwards to the level of the anterior superior iliac spine, and depressing the vaginal roof below. This mass



pushes the uterus over to the left of the middle line. On passing the sound, its point can be felt exactly in the middle line at a height of 2 inches above the symphysis. *Per rectum*, anteriorly and to the left there is a soft swelling projecting into the bowel, about the size and consistence of a normal ovary. The examination added nothing to the knowledge gained by vaginal examination.

3rd.—Patient has had a good deal of pain in the right iliac region and down the thigh. The temperature varied between  $98.6^{\circ}$  and  $102.4^{\circ}$  on October 1st, and between  $99.4^{\circ}$  and  $101.6^{\circ}$  on the 2nd.

7th.—Patient has had a good deal of pain since the last note; it was especially bad yesterday. The temperature has reached  $101^{\circ}$  or  $102^{\circ}$  every night.

9th.—The temperature at midnight was  $103.2^{\circ}$ , and continued above  $103^{\circ}$  all through the night. It fell somewhat in the middle of the day, but in the afternoon again began to rise, and at 5.30 p.m. patient had a rigor with temperature  $105.6^{\circ}$ , and was very sick and collapsed. Improvement followed the administration of quinine and brandy. As, however, the condition of the patient showed no signs of improving with rest, it was decided to explore the abdomen.

*Abdominal section* (October 11th, 1895).—A three-inch incision having been made in the middle line, and the peritoneal cavity opened, the hand was introduced into the abdomen, and the ovary and tube on the left side were found to be normal. Behind and to the right were found the appendages of the right side matted together by adhesions. With very considerable difficulty this mass was now enucleated from the surrounding structures, to which it was everywhere adherent. There was a good deal of hæmorrhage during these manipulations, but the mass was at length brought up to the wound, and was seen to consist of the ovary and tube of the right side. The broad ligament, having been transfixed by a double stout silk ligature, was tied in the usual manner in two portions with interlocking ligatures, and the diseased appendages were removed. No pus was seen at any time during the operation. As there was still a considerable amount of oozing of blood going on in the cavity, after tying one or two small vessels, a plug

of iodoform gauze was inserted into the pelvis. Silkworm-gut sutures were now inserted through the whole thickness of the abdominal wound, and as the bleeding now appeared to have ceased, the iodoform plug was removed, and the wound closed without drainage. A deep buried catgut suture was used to bring together the edges of the aponeurosis covering the rectus muscle.

The parts removed consist of the enlarged ovary and tube and part of the broad ligament. The Fallopian tube and broad ligament are everywhere roughened, owing to the presence of organised adhesions which have been torn through during the removal of the parts. The fimbriated end of the tube is dark and congested. There is a considerable amount of cellulitic thickening around the tube, and also in the broad ligament adjoining the tube. The uterine end of the tube is dilated, and some muco-purulent fluid exudes on pressure. On laying open the tube the wall is thickened, measuring about  $\frac{1}{8}$  of an inch, and the mucous membrane shows signs of acute inflammation. The enlarged ovary, which is hooded over by the broad ligament and tube, measures 2 by  $1\frac{1}{2}$  by  $1\frac{1}{2}$  inches. On section it is found that the greater part of the enlargement is due to the presence of a suppurating cyst, having a smooth lining membrane, and containing six drachms of pus.

Although the operation was not prolonged, there was a great deal of shock following it, and patient's pulse at the end of the operation was very rapid and feeble. A subcutaneous injection of strychnine (5 minims) was given before patient was put back to bed. At 8 p.m. on the evening of the operation the patient was still very bad, and bathed in a profuse perspiration. The temperature was  $103^{\circ}4$ . She was quite conscious and was quite free from pain. Two drachms of brandy were ordered every half-hour. By midnight the pulse had increased in frequency, and could hardly be felt. The abdomen was found to be hyper-resonant right down to the flanks. There was nothing in the appearance of the patient pointing to external hæmorrhage; as, however, the pulse was getting so rapidly weaker, three pints of normal saline solution were infused. The improvement following this was very transitory. At 2 a.m. on the morning

following the operation patient had a prolonged rigor, was very cold, and perspired profusely; the temperature rose to  $105.6^{\circ}$ , and three quarters of an hour later reached  $107.6^{\circ}$ , and at 4 a.m. was  $107.8^{\circ}$ . After this patient rapidly sank, and died at 6 a.m., *i. e.* fourteen hours after the operation.

*Autopsy.*—After opening the abdomen in the usual way, the omentum was found densely adherent to the uterus, urinary bladder, and to the parietal peritoneum to the right of the pubes. The adhesions were evidently of long standing and practically inseparable. The peritoneum in the upper half of the abdomen showed little or no injection, but had lost its polish, and the adjacent surfaces were sticking together. In the lower part of the abdomen there was a mixture of what appeared to be blood, pus, and serous fluid. The left Fallopian tube and ovary had been removed: close to the ligatured stump, and a little below it, a small stream of pus was seen to be welling up through an orifice which only just admitted a small probe. This orifice led into a cavity as large as an orange, filled with pus, which lay between the cervix and bladder, and was bounded below by the vaginal roof. It was evident that this was an abscess in the cellular tissue between the cervix and bladder, which burst into the peritoneal cavity after the patient had been put back to bed, and which, owing to its unusual situation, had escaped notice at the time of the removal of the suppurating cyst. The uterus was enlarged, measuring  $4\frac{1}{2}$  inches long, but was otherwise normal. The liver, spleen, and kidneys were healthy. There was some general œdema of the lungs and marked congestion of the bases, but no evidence of independent disease. The right side of the heart was distended with fluid blood and clot. There was no evidence of valvular disease.

SPECIAL TABLE II.—*Abdominal Section for Diseases of Fallopian Tubes.*

No.	Name.	Residence.	Civil condi- tion.	Date of operation.	Nature of disease.	Nature of operation.	Glass drainage tube.	Ferri- tion flushed.	Result.	Remarks.
1	J. B.	Chelsen	27 M.	1894 Oct. 28	Hæmatosalpinx (right) the result of tubal abortion; pelvic hæmatocele	Right tube and ovary removed with about 10 oz. of blood- clot	No	No	R.	Patient had a normal convalescence, and got up on the 9th November for the first time. On the 22nd Nov. temperature rose to 102° 6' at 8 p.m., and patient complained of some abdominal pain. In three days the temperature had returned to the normal amount, but convalescence was protracted owing to some cellu- litis of the left broad ligament, which slowly became absorbed.
2	A. H.	Edmonton	43 M.	Nov. 29	Left pyosalpinx with small cystic adenoma of right ovary measuring 3 inches by 2½ inches	Both tubes and ovaries removed	No	Yes	R.	The pyosalpinx on the left side con- tained 9 oz. of thick offensive pus. Patient suffered very little discom- fort after the operation, but the temperature during the first 3 days varied between 98° 6' and 101° 6'. At the end of a week it was normal, with occasional evening rise to 100°. Some exudation was found in Douglas's pouch on the 21st Dec., but this had almost disappeared by the 18th Jan., and patient was discharged quite well on the 23rd.
3	J. C.	Kenish Town	49 M.	1895 Jan. 25	Double hydrosalpinx, that on the right side measuring 2½ × 2 inches, that on the left side 6 × 5½ × 5½ inches	Both tubes and ovaries removed	No	No	R.	Patient made an excellent recovery. Highest temp. 99° 4' twelve hours after the operation.



4	M. T.	Rochester	13.	M.	Jan. 31	Tubal gestation; primary rupture into right broad ligament; gestation in broad ligament going on to full term followed by death of fetus and suppuration in gestation sac	Gestation sac opened, and fetus (decomposing) and placenta removed. Appendages of right side and uterus and the sac consisting of left broad ligament were then removed	Yes	Yes	D.	See "Abstract."
5	E. B.	Camborne, Cornwall	30	M.	Feb. 22	Left hydrosalpinx; pelvic peritonitis	Left appendages were removed	No	No	R.	Normal convalescence.
6	M. C.	Clapham	25	M.	Mar. 3	Double catarrhal salpingitis (gonorrhoeal)	Right Fallopian tube removed (ovary left); left tube and ovary removed	No	Yes	R.	Patient had an attack of acute pelvic inflammation a week after her marriage in Jan., 1895, which was followed by a second attack commencing a week before admission. She was extremely ill on admission to the hospital, but after the operation made an excellent recovery.
7	J. D.	Clapham	34	M.	Apr. 18	Left hæmatosalpinx due to tubal mole; pelvic hæmatocele	The left Fallopian tube with the cystic left ovary were removed together with 13 oz. of blood-clot	No	Yes	R.	Normal convalescence.
8	H. R.	St. Albans	33	M.	May 30	Double pyosalpinx; inflamed cyst of the right ovary; intra-peritoneal abscess	The pyosalpinx on the right side was removed, the ovary being left; the left pyosalpinx was opened and drained	Yes	No	D.	The operation was rendered extremely difficult owing to the firm adhesions of the tumours to bladder, rectum and broad ligament. The sac of the left pyosalpinx was opened during the separation of adhesions, but the patient was too collapsed to continue the separation from the surrounding parts. Patient died 8 hours after the operation.

No.	Name.	Residence.	Age.	Civil condition.	Date of operation.	Nature of disease.	Nature of operation.	Glass drainage tube.	Periton. flushed.	Result.	Remarks.
9	M.C.	Camberwell	34	M.	1895 June 6	Right hemato-salpinx; left pyosalpinx	Both tubes removed; the ovaries left behind	No	Yes	R.	Patient was in the hospital for 4 weeks under observation, and as she did not improve operation was decided upon. Patient went on well after the operation, and stitches were removed on the 6th day. On the 11th day, however, the wound was found gaping for 2 inches at the lower angle, and bowel was visible; four deep sutures were inserted to approximate the edges, after which patient made a good recovery. Normal convalescence.
10	E.	Lambeth	40	S.	June 21	Double hydrosalpinx; right containing 18 oz. and left about 12 oz. of pale yellow watery fluid	Both Fallopian tubes and ovaries removed	No	No	R.	
11	A. W.	Vauxhall	31	M.	June 27	Tubal gestation on right side; pelvic hamatocoele	Right Fallopian tube and blood-clot removed (ovary being left)	No	Yes	R.	Present illness commenced with a severe attack of abdominal pain and faintness when she was 12 days beyond the usual time for her period. A blood-stained vaginal discharge then began, which continued up to the time of her admission to the hospital ( <i>i. e.</i> for 4 weeks), accompanied by pain and attacks of faintness. She made a good recovery after the operation.
12	L. C.	York Road	23	M.	July 4	Right pyosalpinx; left pyosalpinx and small cystic ovary	Both Fallopian tubes with the inflamed cystic ovary on the left side were removed; the	No	No	R.	Temperature rose on the 4th day after operation to 101.2° at 8 p.m., and to 103° at midnight. The next day it had fallen to 100°, and patient was much better. There was some pain.

						right ovary, being normal, was left <i>in situ</i>					and tenderness in the abdomen, but no distension. The temperature varied between 99° and 101° for a fortnight after the operation, and some exudation in Douglas's pouch was discovered on examination. This gradually became absorbed, and patient left the hospital quite well on August 3rd.
13	E. S.	Hampstead	45	M.	Oct. 3	Right pyosalpinx with suppurating cyst of the right ovary; pelvic peritonitis	Right Fallopian tube and ovary removed	48 hours, then rubber tube	Yes	R.	During the operation the cyst burst during the separation of adhesions, and some very offensive pus welled up into the wound. The diseased parts were then separated as rapidly as possible, the peritoneum douched, and drainage used for 5 days. The patient made an excellent recovery.
14	J. O.	Beckenham	46	M.	Oct. 8	Right hydrosalpinx; left chronic salpingitis with cystic ovary	Appendages of both sides removed	No	No	D.	Patient complained of some pain and tenderness in the abdomen on the 3rd day after operation; there was, however, no distension, and temperature was normal. Very good result followed an enema given on the 4th day, but at midday patient was sick. This sickness continued and distension of the abdomen was noticed, and on the 6th day patient became suddenly worse with more distension, and she died very rapidly. The autopsy showed death to have been caused by atony of the small intestine.
15	A. C.	Brixton	21	S.	Nov. 21	Double purulent salpingitis; abscess in left ovary	Appendages of both sides removed	No	Yes	R.	Normal convalescence.

Name.	Residence.	Civil or military condition.	Date of operation.	Nature of disease.	Nature of operation.	Glass drainage tube.	Pertion. flushed.	Result.	Remarks.
16 S. B.	Wands- worth Road	31 M.	1895 Nov. 29	Right hydrosalpinx containing 1 pint 12 oz. of clear fluid	Right appendages removed	No	No	R.	A number of pedunculated papilloma- tous growths projected into the inte- rior of the tube, and a few were also found on the outer surface. The parts removed closely resembled a tubo-ovarian cyst. See "Abstract."



*CASE 4. Gestation in right Fallopian tube ; primary rupture with continuance of the pregnancy in the right broad ligament ; death of the fetus at term, followed by suppuratum in the sac ; abdominal section ; death from peritonitis* (from notes by E. Whichello).—M. T—, *æt.* 43, married, residing at Rochester, admitted 27th January, 1895 ; died 1st February, 1895.

Catamenia always regular, twenty-eight-day type, lasting three days, normal in amount, and unaccompanied by pain. She was married in 1879, after which she occasionally missed a period, but always came on regularly the next. She only, however, missed three or four periods in this way, and has been quite regular up till February of last year. She missed her usual period in March, 1894, and thought it was the "change" coming on. In April she noticed she was a little larger in the abdomen, and thought she might be pregnant ; and about the last week in April, while working in the kitchen, she was suddenly seized with acute pain in the abdomen. She sent for a doctor, and was kept on her couch in the kitchen for a fortnight, and was treated with fomentations and liquid food. During the second week of her illness she had a discharge of blood from the vagina, and some clots were passed. Patient does not think the discharge lasted longer than an ordinary period, and at the end of the second week was able to walk upstairs to her room, and soon recovered her usual health. Since this attack she has gradually increased in size in the abdomen, and at the end of September she felt foetal movements for the first time ; they were very strong during October, November, and December. During November her breasts were full of milk, which escaped at times, but this gradually stopped towards the end of December. On the 15th December patient had a few sharp pains in the lower part of her abdomen, which recurred about every five minutes. They only continued for a few hours, and then ceased entirely till the afternoon of January 4th, 1895, when she had a second attack of a similar nature. At the beginning of January, 1895, she noticed that she no longer felt the foetal movements, and soon after this her abdomen began to feel sore, and now for the first time she noticed a

pink vaginal discharge. She had to keep quiet, and spent a good deal of her time in bed, and during the last three weeks she has been sick after taking solid food. She was examined by her doctor on the 25th January, who advised her to consult Dr. Cullingworth. She saw him on the 26th, and he gave her an order for admission to the hospital, with a view to operation as early as possible.

On admission patient is a healthy-looking woman, complaining of something being wrong with her pregnancy. The breasts are small and flaccid, and a few drops of milk can be squeezed from the nipple. The abdomen is distended and prominent, corresponding to the size of a pregnancy advanced to the seventh month. The enlargement is more marked on the right side. The umbilicus is flattened out and slightly prominent, and the maximum girth is at this level and measures 40 inches. There is general feeling of resistance over the whole abdomen, which is specially marked on the right side, where a definite swelling can be made out, extending to at least two inches to the left of the umbilicus; it is firm, resistant, and moveable, and *ballotement* is obtainable with the fingers in the right flank. The swelling to the right of the umbilicus is smooth and uniform on the surface, but below and to the left of the umbilicus is felt an angular body which resembles a limb. No foetal movements are felt on examination. There is dullness on percussion over the greater portion of the tumour. *Per vaginam* the os uteri can only just be reached, and is patulous.

January 28th.—Patient is feeling rather better; the bowels acted very freely after medicine, and patient has not been sick. The temperature rose last night to  $102.4^{\circ}$ ; this morning it is  $101.2^{\circ}$ .

29th.—The tumour in the left iliac region is very tender on palpation, and there is also tenderness over the swelling on the right side of the abdomen. She feels very well in herself, and is able to retain her food.

30th.—Patient was examined under an anæsthetic to-day, Dr. Herman of the London Hospital being present with Dr. Cullingworth. *Per vaginam*, the cervix uteri was reached high up behind the symphysis, flush with vaginal

roof, and median in position. It could be felt externally about 1 inch above the highest point of the symphysis pubis. The posterior vaginal wall was bulged down and made tense by an elastic fluctuating swelling, the limits of which could not be defined. Pressure applied to the tumour lying in the right flank was felt to be communicated to the swelling in Douglas's pouch. The diagnosis was considered to lie between an extra-uterine gestation and a displaced pregnant uterus with an ovarian tumour. Dr. Herman concurred with Dr. Cullingworth as to the difficulty of diagnosis, and thought with him that, taking into consideration the temperature and the evident death of the foetus, operation was desirable.

31st.—Patient feels better this morning; the highest temperature last night was  $101^{\circ}$ , and this morning it is  $99^{\circ}$ . Urine is acid, contains albumen, some blood, and a deposit of urates.

*Abdominal section* (January 31st).—Median incision  $5\frac{1}{2}$  inches long. The uterus was seen at the bottom of the wound, entirely continuous with the gestation sac by its posterior and upper border. Numerous adhesions were found over the front of the tumour, and in trying to separate these there was a large escape of foul-smelling blood-stained puriform fluid. This was at first thought to come from an abscess cavity, separate from the gestation sac, but was subsequently found to have come from the sac itself. The incision was now lengthened half an inch to get a better view of the tumour, and a median incision was made over the front of the swelling in order to remove the foetus. This incision went partly through the sac, and at the lower part had divided the uterus which formed the sac wall in this situation. The foetus was now removed, and with it a quantity of foul-smelling purulent fluid escaped. The foetus was decomposing, and was rapidly extracted, the umbilical cord being clamped and divided. The placenta was now searched for and easily detached and removed with the membranes, no hæmorrhage occurring during its separation. The sac formed by the broad ligament and the uterus was now brought out of the wound, and it was decided to remove as much as possible. Numerous and firm adhesions



of the sac to the surrounding parts were broken down with the fingers with great difficulty ; a portion of the sac which was adherent to the intestine in Douglas's pouch it was found impossible to remove, so this was left adherent. The task of separating the adhesions was long and tedious, and occupied nearly an hour. The broad ligament on the left side was transfixed with a pedicle needle, tied in two places, and divided between. The condition of the patient at this stage of the operation was fairly good. In preparing the right broad ligament for ligature, some firm adhesions had first to be ligatured. The two uterine arteries were now sought for and secured with silk ligatures ; it was a little difficult to be certain whether the main branch on the left side was tied. The uterus was now cut through transversely, after which the uterine artery on the left side was again ligatured. The right broad ligament was now transfixed, tied in two places, and divided between, and in this way the sac with the upper part of the uterus forming part of the wall of the sac was removed entire. The uterine stump was now closed in by means of seven silk sutures passed after the Lembert method. Several tags of adhesion were now ligatured and cut short, and the peritoneal cavity was douched with boracic lotion. A glass drainage-tube was now inserted into the pouch of Douglas, and the wound was closed by twelve deep abdominal sutures of silkworm gut. About halfway through the operation twenty minims of brandy were injected hypodermically. At the end of the operation patient was somewhat collapsed, but the pulse, though rapid, was not excessively feeble.

The foetus removed was a male, measuring  $20\frac{1}{2}$  inches long, and weighing 6 pounds 4 ounces. There was a centre of ossification,  $\frac{5}{16}$  inch in diameter, in the lower epiphysis of each femur. The foetus was decomposed, the head being distended with gas, and the cranial bones soft and moveable. The placenta weighed 2 pounds 9 ounces, and measured 9 inches in diameter and 2 inches thick. The portion of uterus removed with the sac measures 3 inches transversely,  $1\frac{1}{2}$  inches vertically, and 1 inch in thickness. The anterior surface is smooth, but the posterior surface is rough where the gestation sac had been stripped off. The broad



ligament in the left side has been divided at a distance of 2 inches from the uterus. On tracing the right Fallopian tube outwards the lumen was found to be obliterated at a distance of  $\frac{1}{2}$  an inch from the uterine end; there is no evidence of any lumen between this point and the gestation sac. The broad ligament on this side is enormously expanded, and forms the greater part of the gestation sac, the remaining portion of the sac being formed by adherent intestines and other abdominal viscera. The outer surface of the sac has an opaque whitish colour, and is everywhere covered by shaggy fibrous bands due to the adhesions; the inner surface presents a dirty greenish-yellow surface, the result of necrotic change in the wall of the sac. The placental site can be recognised by its pinkish-white colour and smoother surface. At 5 p.m., viz. half an hour after the operation, patient was very collapsed, temperature  $96.2^{\circ}$ , pulse very small and thready. 8 p.m., temperature has risen to  $99^{\circ}$ ; pulse 134. The wound was dressed, and 4 drachms of blood-stained fluid were removed by means of a pipette. Respirations were shallow and rapid. Midnight, temp.  $99.2^{\circ}$ ; pulse 138, small and thready. Two ounces of brandy ordered to be given at intervals during the night.

February 1st.—Brandy and hot milk have been taken and retained during the night, and seemed to strengthen the patient. This morning she is conscious and cheerful; temp.  $101^{\circ}$ . 11 a.m., saline injection given *per rectum* improves the condition of the patient somewhat, but there was slight retching after it. 2 p.m.—At noon patient showed a little improvement, but this was only transitory, and she is now much worse, the face showing a marked change. She got gradually weaker after this, and became unconscious at about 6 p.m.; shortly after 8 p.m. she died.

*Autopsy.*—On opening the abdomen the intestines are everywhere hyperæmic and lustreless; they are adherent to each other by flakes of lymph, and amongst the adherent coils are several independent collections of dirty-looking fluid. The largest of these occupied the pelvis. The omentum is of a slate-grey colour and very greatly thickened. The part of the sac which was left behind is adherent over the sigmoid flexure and its mesentery. The right ureter

is somewhat dilated, the left is normal. The kidneys are normal in size; on section their prevailing tint is yellow, but this is varied with patches of intense congestion. The surface of the kidney is smooth, except for a number of little pimples which formed the centre of the patches of hyperæmia, and which are undoubtedly pyæmic deposits. The portion of uterus left *in situ* appears to be normal. There is congestion of the bases of both lungs, and in the middle of the left base was a small pyæmic deposit the size of a bean. There is some atheroma of the aortic and mitral valves, and definite hypertrophy of the left ventricle. The left side of the heart is firmly contracted, the right is flaccid and full of clot, partly of the yellow gelatinous type, and partly of the currant jelly variety. There is no sign of embolism in the pulmonary vessels.

CASE 16. *Right hydrosalpinx with intra-cystic papillomatous growths resembling a tubo-ovarian cyst; abdominal section; recovery* (from notes by P. Blaber).—S. B—, æt. 31, residing at Wandsworth, admitted 25th November, 1895; discharged 28th December, 1895.

Menstruation began at the age of twelve. She had amenorrhœa for six months soon after it commenced, but since then has always been regular. She has always suffered a considerable amount of pain at the periods, but this has been worse since her marriage, at the age of eighteen. She has usually had to rest on the first day of the period, when the flow has been most profuse. She has had no children and no miscarriages. The present illness commenced about two months ago, when she noticed a hard swelling in her abdomen, and "bearing-down" pain at the end of micturition. She has had no difficulty, however, in passing her water or with her bowels. The pain after micturition was severe for a day or two, and after a month passed off entirely. Patient has noticed that her abdomen has been getting larger since last Christmas, but she considered this due to her getting fatter. During the last month she has occasionally suffered from dragging pain in the lower part of the abdomen in the region of the navel. For this she consulted a doctor, who advised her admission to the hospital.

On admission, patient is a healthy-looking woman with a rounded swelling in abdomen, causing some prominence between the umbilicus and the pubes. On palpation the swelling is found to be due to a soft, round, elastic tumour, as large as a cocoa-nut, reaching up to the level of the umbilicus, and extending outwards for 3 inches on each side of the middle line. The tumour is freely moveable within certain limits. There is dulness on percussion over the greater part of the tumour. The lower limit of the tumour can be readily defined when the hand is pressed in above the pubes. Fluctuation is obtained all over the mass, but a fluid thrill is not obtainable. The girth at the umbilicus is  $30\frac{1}{2}$  inches; the maximum girth at a level of 2 inches below the umbilicus is 33 inches. No part of the tumour encroaches on the vagina. On pushing the tumour upwards the right uterine appendages are dragged upon. The uterus is normal in size and position.

*Abdominal section* (29th November, 1895).—After a median incision  $2\frac{3}{4}$  inches long between the umbilicus and the pubes, the peritoneum was opened, and the tumour was seen presenting with a greyish-white, shining surface. On inserting the hand the anterior surface of the tumour was felt to be rough and granular. The right ovary was found lying behind the uterus, and turned round on itself. The left ovary could not be felt. The small trocar was now inserted into the cyst, and a clear, greenish fluid drained away. The cannula was then removed, and the opening closed with clamp forceps, and the collapsed cyst was then slowly drawn out as far as possible through the wound. The left ovary was now found to be adherent to the back of the broad ligament on the left side. The distended Fallopian tube on the right side was now evident, and closely resembled a coil of small intestine. A great many adhesions of the cyst were found in Douglas's pouch, and required careful separation, especially those in the region of the rectum. To prevent injury to the gut the finger of an assistant was inserted into the rectum during the separation. A very firm band of organised adhesions was felt stretching from the cyst to the anterior wall of Douglas's pouch; this was broken through after a good deal of trouble, but in



doing so a small piece of the outer wall of the cyst was torn away. The gut being now entirely freed from the surrounding parts, the pedicle was transfixed, tied in two portions, and divided on the distal side of the ligature. The pelvis was now cleansed with marine sponges, and as hæmorrhage was found to be very slight, the wound was brought together by means of three deep silkworm-gut sutures. Before tying these the edges of the rectal aponeurosis were brought together by a continuous catgut suture.

The parts removed consist of the distended Fallopian tube of the right side, with a cystic swelling measuring 5 inches in the collapsed state. The Fallopian tube is dilated and somewhat tortuous, and measures  $\frac{1}{2}$  to  $\frac{3}{8}$  of an inch in diameter. This enlargement is, however, chiefly due to cellutic thickening around the tube. The tube can be traced for a distance of  $3\frac{1}{2}$  inches in the upper part of the broad ligaments, and then suddenly opens by means of an aperture large enough to admit a pencil into the interior of the cyst above mentioned. There is a considerable amount of cellutic thickening in the inner part of the mesosalpinx. Around the opening by which the inner part of the tube communicates with the cyst, the inner surface of the cyst presents a number of radiating folds, some of which have the appearance of stretched fimbriæ. Over the rest of the inner surface the cyst has a smooth lining, except where at one part a number of pedunculated papillomatous growths project into the interior. On cutting through the wall of the cyst at one part ovarian tissue is seen. The fluid removed measures 32 ounces; it is acid, sp. gr. 1030, and becomes solid on boiling. It was thought that the tumour might prove to be a tubo-ovarian cyst, and for this reason the tumour was submitted to a sub-committee of the Obstetrical Society of London, consisting of Mr. Bland Sutton, Dr. Cullingworth, Mr. Doran, Dr. Griffiths, and Mr. Shattock. After careful investigation they pronounced the case to be one of hydrosalpinx, the ovary being stretched over one portion of it as a thin layer.

30th.—Patient had a great deal of pain last night, and slept very little. She retched a little during the night, but



has not been sick. The temperature is normal, and she has a strong, regular pulse.

December 2nd.—Patient is going on well. The temperature on the last two evenings has reached 100°. An enema was given this morning with very good result. The wound was dressed, and is looking quite healthy.

6th.—Convalescence quite satisfactory since last note. Sutures removed to-day ; the wound has united well.

14th.—Patient continues to make satisfactory progress. Temperature rose last night to 100°, but is normal this morning.

15th.—Got up for the first time to-day.

24th.—Patient has gradually gained strength since the last note, and feels quite well.

28th.—Discharged from hospital.

SPECIAL TABLE III.—*Abdominal Section for Conditions other than Diseases of Ovary and Fallopian Tube.*

No.	Name.	Residence.	Age & condition.	Date of operation.	Nature of disease.	Nature of operation.	Glass drainage tube.	Pertition flushed.	Result.	Remarks.
1	M. H.	Blackfriars	35 M.	1894 Dec. 7	Rupture of vagina and cervix, consequent on parturition in a case of shoulder presentation and placenta prævia	Exploratory laparotomy	No	Yes	R.	See Abstract.
2	M. M.	Wandsworth	28 S.	1895 Jan. 3	Subperitoneal fibroid tumours of uterus	Myomectomy	No	No	R.	The history in this case was somewhat suggestive of tubal gestation, so it was thought advisable to explore the abdomen. On the 19th Nov., 1894, patient had a normal period lasting 5 days; 6 days later she again began to lose, and continued to have hæmorrhage up to 16th Dec., when she was suddenly seized with severe pain in the lower part of the back, which obliged her to keep in bed up to the time of her admission on the 24th Dec.
3	C. R.	Camberwell	30 M.	Jan. 10	Retro-uterine cyst containing blood-stained serum	The cyst was opened during the separation of adhesions, and its contents evacuated, and as its wall was very thin and directly in contact with the bony wall of the pelvis, it was thought best not to attempt to remove it	No	No	R.	Patient was admitted for bearing-down pain, which had lasted for 4 months, and for tenesmus of 4 days' duration. There was a little suppuration in the wound after the operation, but otherwise patient made a good recovery.

4	J. J.	Chiswick	44	S.	Jan. 11	Fibroid tumour of the uterus; abscess in the neighbourhood of the gall-bladder	No	No	U.	See Abstract.
5	L. G.	Palmer's Green	35	M.	Jan. 24	Subperitoneal fibroma of uterus, causing pain in lower part of abdomen, and associated with frequency of micturition	No	No	R.	The frequency of micturition was relieved but not cured by the operation. Patient was admitted a second time to the hospital in August, 1895, and complete cure followed dilatation of the urethra.
6	F. L.	New Swindon	36	M.	Feb. 11	Sloughing uterine fibro-myoma; fistulous communication with transverse colon	No	Yes	D.	At the operation the tumour was found firmly adherent to the transverse colon, and on separating the bowel four apertures were seen in the intestine, where the tumour had been adherent to it. The ulcerated portion of bowel was covered in by means of Lembert's sutures, but patient died of shock about 24 hours after the operation.
7	M. C.	Waterloo Road	30	M.	Feb. 18	Septicæmia following parturition; intra-peritoneal abscess; septic ulceration of colon	Yes	Yes	D.	Patient was extremely collapsed after the operation, and morphine $\frac{1}{4}$ gr., and strychnine $\frac{1}{16}$ gr., were given hypodermically. She passed a number of liquid stools, but no flatus. Her condition somewhat improved on the day after the operation, but the passage of liquid faeces continued, and later on the distension of the abdomen returned. This distension continued to increase and was unrelieved by enemata, and patient gradually got weaker and died on the 3rd day.

No.	Name.	Residence.	Age.	Civil condition.	Date of operation.	Nature of disease.	Nature of operation.	Glass drainage tube.	Periton. flushed.	Result.	Remarks.
8	E. H.	Haverstock Hill	55	M.	Mar. 14	Fibro-myoma of uterus	Abdominal hysterectomy	No	No	R.	The amount lost at the periods had been getting gradually more and more during the six years prior to her admission. A short time before her admission she had a recurrence of most alarming floodings, in the last of which she became quite unconscious. She made an excellent recovery after the operation.
9	M. C.	Edmonton	22	M.	Mar. 20	Intra-peritoneal abscess, probably secondary to salpingitis	Abscess opened and drained by median incision	Rubber tube for 14 days	Yes	R.	Normal convalescence.
10	S. F.	Margate	53	W.	April 4	Malignant papilloma of omentum, intestine, mesentery, &c.	Exploratory laparotomy	No	Yes	D.	A greater part of the disease which involved the omentum was removed, but the disease was found to have also invaded the retro-peritoneal tissue nearly up to the pancreas, and this could not be removed. Patient rallied a little after the operation, but later on persistent vomiting set in, and she died on the 3rd day.
11	K. C.	Hartington Road	22	M.	Apr. 25	Intra-peritoneal abscess	Abscess opened and drained	Rubber tube for 4 weeks	No	R.	The abscess cavity slowly granulated up, and patient made an uninterrupted recovery.
12	E. S.	Peckham	42	M.	May 7	Fibro-myoma of uterus	Abdominal hysterectomy	No	No	R.	The tumour had burrowed in the left side between the layers of the broad ligament, from which it had to be enucleated. Convalescence was delayed owing to an abscess developing



13	E. J.	Wincanton, Somerset- shire	37	S.	May 10	Fibro-myoma of uterus causing pain and difficulty in micturition	Abdominal hysterectomy	No	No	R.	in this situation, which was opened and drained by means of an incision above Poupart's ligament. Patient made a good recovery.
14	L. F.	Lambeth	20	M.	May 14	Intra-peritoneal abscess secondary to salpingitis	Abscess opened and drained <i>per</i> <i>vagina</i> ; 17 days later exploratory laparotomy on account of recur- rence of symptoms; faecal fistula; secondary laparo- tomy to establish anastomosis	Rub- ber tube	Yes	D.	Patient was unrelieved by the first operation in which drainage was established <i>per vagina</i> , and it was therefore found necessary to open the abdomen and endeavour to drain the abscess cavity from above; great difficulty was found in getting down to the abscess, and in the course of the operation a portion of peritoneum was stripped off the intestine. This was followed by formation of a faecal fistula. As it continued to discharge after an interval of ten weeks the abdomen was reopened by Dr. Cul- lingworth's surgical colleague, and an attempt made to establish an anastomosis. Patient died from shock.
15	S. C.	Lambeth Infirmary	33	W.	May 16	Fibro-myoma of uterus causing menorrhagia for three years	Abdominal hysterectomy	No	No	R.	Patient made an uninterrupted re- covery. Highest temperature after the operation 99°.
16	E. B.	West- minster	50	M.	June 6	Fibro-myoma of broad ligament; twisted pedicle. Weight of tumour 7 lbs. 12 oz.	Pedicle transfixed and tied in two portions as in the case of a simple ovarian tumour	No	No	R.	The tumour was attached to the back of the right broad ligament by means of a pedicle 3 inches long, which was twisted one and a half turns. Patient made an excellent recovery.

No.	Name.	Residence.	Age.	Civil condition.	Date of operation.	Nature of disease.	Nature of operation.	Glass drainage tube.	Periton. flushed.	Result.	Remarks.
17	E. D.	Mildenhall, Suffolk	40	M.	July 12	Fibro-myoma of uterus causing menorrhagia and occasional attacks of pain, with gradually increasing weakness and loss of flesh	Abdominal hysterectomy	No	No	R.	Normal convalescence. Patient discharged on 10th August quite well.
18	A. L.	Dulwich	49	S.	Sept. 19	Fibro-cystic tumour of cervix weighing 6 lbs. 11 oz.	Abdominal hysterectomy	No	No	D.	The operation was extremely severe, owing to the extensive enucleation necessary for the removal of the tumour and the unusual amount of hæmorrhage. Patient died of shock half an hour after the completion of the operation.
19	A. M.	Clapham	24	M.	Sept. 26	Perityphlitic abscess as the disease was thought to have originated in the Fallopian tube	Exploratory laparotomy was performed,	No	No	R.	As it was found that the disease affected the vermiform appendix, and fluctuation could be felt near Ponsart's ligament, the abdominal wound was closed, and the case was transferred for further treatment to the Surgical ward.
20	R. B.	Stockwell	75	W.	Oct. 3	Tuberculous peritonitis; ascites	Exploratory laparotomy; fluid (12½ pints) evacuated	No	No	D.	The peritoneum of the posterior portion of the pelvis and Douglas's pouch was pushed forward by a mass of tubercular glands, which, on vaginal examination previous to the operation, made the diagnosis of papillomatous disease of the ovaries the probable explanation of the physical signs. Patient was a very feeble subject, and never rallied from the operation.

21	E. S.	Battersea	31	M.	Oct. 4	Fibro-myoma of uterus rapidly increasing in size, and causing pain and loss of flesh	Abdominal hysterectomy	No	No	D.	The day following the operation the temperature rose to 100° 6', and the pulse was rapid (120 to 130). She had some retching during the first 24 hours, but none afterwards. The pulse gradually got weaker and more rapid, and she died on the 4th day after the operation. At the autopsy about a pint of dark fluid blood was found in the pelvis, the source of which was in part from the right ovarian artery.
22	M. S.	Merthyr Tydfil, South Wales	40	M.	Oct. 10	Fibro-myoma of uterus associated with a 5 months' pregnancy	Abdominal hysterectomy	No	No	D.	The operation was performed in the usual way, and the presence of the pregnancy added little, if any, to the difficulty of the operation. Sickness set in 2 days after the operation with some abdominal distension. The sickness increased in frequency and amount in spite of treatment, and the distension increased. Patient died on the 4th day after the operation. See Abstract.
23	M. L.	Nanhead	29	S.	Oct. 24	Fibro-myoma of uterus, causing severe attacks of pain for 2½ years	Abdominal hysterectomy	No	No	R.	The tumour in this case was growing from the anterior wall of the uterus, and the cause of the pain was obvious on examination of the tumour, as the greater part had undergone extensive necrotic change. Patient made an excellent recovery.
24	M. F.	Chislehurst, Kent	43	M.	Nov. 28	Fibro-myoma of uterus, causing menorrhagia for 3 years and frequency of micturition for 2 years	Abdominal hysterectomy	No	No	D.	Patient had a rapid pulse after the operation, but otherwise her condition was fairly satisfactory during the first 48 hours. After this tympanites developed, and was unrelieved by enemata or purgatives, and patient died on the 4th day.

No.	Name.	Residence.	Age.	Chief condition.	Date of operation.	Nature of disease.	Nature of operation.	Glass drainage tube.	Periton. flushed.	Result.	Remarks.
25	S. S.	Draughton, Northamptonshire	40	S.	Dec. 13	Fibro-myoma of uterus, causing periodic attacks of pain and retention of urine for 18 months	Abdominal hysterectomy	No	No	U.	Patient had a perfectly normal convalescence for the first fortnight after the operation, and appeared to be quite out of danger, when on the 15th day after operation symptoms of acute intestinal obstruction set in, and she had to be transferred to the Surgical ward and the abdomen reopened. This was done on the 30th Dec., and matting of the small intestine in five or six places was found. The condition, however, returned, and patient died on the 12th January, 1896.



CASE 1. *Rupture of vagina and cervix occurring during parturition in a case of shoulder presentation ; abdominal section ; recovery* (from notes by J. Smith).—M. H—, æt. 35, residing at Blackfriars, admitted 6th December, 1894; discharged 12th January, 1895.

Catamenia began at the age of twelve, of the twenty-eight-day type, always regular. She was married at the age of nineteen. Has had eight children born alive, and two miscarriages. The first child was born ten months after her marriage ; labour was prolonged, but otherwise normal. Her other confinements have all been quite straightforward, and instruments have never been used. She has usually suckled her children for fifteen or sixteen months, viz. as to four months before the birth of the next child. Her first miscarriage occurred between the first and second children, the second between the fifth and sixth. Patient has noticed that her last children have been much larger at birth than her earlier ones. The present illness dates from her last confinement, which was completed at 5.30 a.m. on December 4th, 1894. She was attended by a midwife from the General Lying-in Hospital, who summoned the house physician of that institution to see the case. He found the case was one of shoulder presentation, complicated with placenta prævia. As the membranes were ruptured and the cervix fully dilated, chloroform was administered, and internal version performed without any difficulty, and the child was delivered. The child was dead, of large size, and weighed 9 pounds 15 ounces. After removing the placenta it was found that there was a large rent in the roof of the vagina, at the right and posterior aspect, through which it was thought that a knuckle of intestine was protruding. The uterus was washed out with iodine solution. The patient's temperature at 2 p.m. on the day following the confinement was  $97\cdot8^{\circ}$ , but it rose to  $100^{\circ}$  in the evening, with a pulse of 126. The following day the temperature in the morning was  $100\cdot4^{\circ}$ , and in the evening  $101\cdot2^{\circ}$ . Patient was sick, and complained of a good deal of general tenderness over the abdomen on pressure. An attempt was made to remove the knuckle of intestine, but this failed, so a drainage-tube was passed through the rent, and the vagina plugged with

iodoform gauze. Patient was sent up to the hospital at 11.45 p.m. on the 6th December, as it was thought possible that abdominal section might be required.

Dr. Cullingworth came down to see the patient shortly after her admission, and as the patient was still suffering from vomiting he decided to open the abdomen.

*Abdominal section* (7th December, 1894).—The abdomen having been opened by a median incision, the hand was passed down deeply into the cavity of the pelvis, and it was found that there was now no portion of intestine protruding through the rent. To further confirm this a vaginal examination was made, but there was no sign of strangulation or obstruction of the bowel. A large rent, capable of admitting four fingers, was found around the right side of the roof of the vagina, reaching up to the cervix, but not involving the uterus. It was about in the position of the reflexion of peritoneum off the upper part of the vaginal wall. Anteriorly on the left side was a second tear through the peritoneum, and laying open the cellular tissue, but not extending through into the vagina. The peritoneal cavity was now douched with boracic solution at a temperature of 105°, and the patient was put back to bed. As no part of the intestine showed any tendency to protrude through the rent, it was not thought advisable to attempt any closure of the tear.

December 7th.—The temperature at 4 a.m. this morning was 97°, with pulse 116. At 7 a.m. a simple enema was given with very good result. The enema was given at this early period, as there was no time to get any action of the bowels prior to the operation. Patient complains of intense thirst, but has had no more sickness.

8th.—Patient was very sick yesterday afternoon, and was very restless during the whole day. At 6.45 p.m. one sixth of a grain of morphia was given hypodermically, after which she slept for a short time. This morning she is not so sick, her pulse is good, and she looks better.

10th.—On the night of the 8th, patient had an irritable form of diarrhœa, which disturbed her night. Yesterday one ounce of castor oil was ordered, which brought away a number of hard scybala and loose fæces, and greatly

relieved the patient. There is a little offensive vaginal discharge to-day, for which a douche is ordered. Since the operation patient has suffered from bronchitis: her breathing has been rather hurried, and she has had some difficulty in expectorating.

11th.—The lower stitches were removed this morning, and the edges of the wound in the lower part were in a sloughy condition. Some watery pus escaped from the wound on removing the stitches. The vaginal discharge is very offensive. The temperature has ranged between  $98^{\circ}$  and  $100.8^{\circ}$  during the last twelve hours.

14th.—The discharge from the wound and the vaginal discharge is much less abundant, and less offensive. The general condition has much improved. The remaining stitches were removed to-day.

18th.—There is a considerable cavity at the lower part of the wound, which is slowly closing up, and which is plugged with iodoform gauze. Temperature has reached  $102^{\circ}$  to  $102.6^{\circ}$  every night since the last note, but is always below  $100^{\circ}$  in the morning. Patient's bronchitis is much better.

22nd.—Much better this morning. The cough is much less troublesome. Slept well last night. Temperature is normal.

28th.—Wound is gradually healing up, though there is still a large cavity which requires plugging. There is very little discharge from the wound. On vaginal examination to-day, there is found to be an extensive laceration of the cervix extending into the vaginal roof. The peritoneal cavity is completely shut off. Patient has had attacks of sickness lasting for short periods since the last note, but they have not caused any grave symptoms.

January 1st, 1895.—On examination to-day it is evident that the laceration has implicated the vaginal wall to a very considerable extent. Part of the vaginal tear seems to be represented by a firm line of cicatrix extending directly upwards from the right side of the cervix. There is no attempt at repair of the lacerated cervical tissue. The sound passes directly upwards for 3 inches.

5th.—The wound is looking very healthy. Patient has



been getting up every evening since the last note, without any unfavorable result.

12th.—Patient has continued to improve since she has been getting about, and is discharged from the hospital to-day.

CASE 4. *Subperitoneal fibroid tumour of the uterus associated with suppuration in the neighbourhood of the gall-bladder ; abdominal hysterectomy ; recovery from the primary operation ; transference of the patient to the Surgical ward for further treatment* (from notes by A. B. Heaton).—J. J—, æt. 44, residing at Chiswick, admitted 5th January, 1895 ; transferred to Surgical ward 24th January, 1895.

Catamenia began at the age of sixteen, always regular, lasting about seven days. She usually has a good deal of pain before the onset of the flow. Patient has had one child twenty-three years ago. For the past twelve months the periods have begun to be irregular, not lasting so long, and with irregular intervals. The quantity lost has never been excessive. In July last patient began to suffer considerable pain in the right side of the abdomen, and has gradually got worse. At times she has been fairly free from pain, but it has never left her ; the pain is of an aching, smarting character, and occasionally shoots down into the right leg ; it is always increased on exertion. On the evening of September 11th, 1894, patient had a severe attack of pain in the right side of the abdomen. She had to go to bed at once, and brandy was given to her, which she vomited at once. Poultices were applied for a week to the right side of the abdomen. Any movement in bed aggravated the pain, which began as a dull aching pain, and changed to a smarting, tearing sensation. Although she was only given milk and beef tea, she was constantly sick after her food. At the end of the first week she noticed an unnatural hardness in the right side of the abdomen. She remained in bed for three weeks, and then went to Bournemouth for three weeks' change of air. After she returned home she got on comfortably for a month, though she felt tired after working, and could not lie on the right side. On the 1st December, while standing, she had a sudden severe



attack of pain in the right side, and was unconscious for a time; after this she was advised to come to a hospital. During the last two years patient has noticed that her abdomen has increased in size, especially during the past six months.

On admission patient is a stout, healthy-looking woman, complaining of pain and enlargement of the abdomen. The abdomen is prominent, especially on the right side above the level of the umbilicus, and on the left side around the umbilicus. On palpation an irregular tumour can be felt reaching into the lumbar region on the left side, and on the right side to the level of the nipple line below the umbilicus, but above this extending outwards and upwards to the costal margin. Two sulci can be distinguished, one passing downwards and to the right just above the umbilicus on the right side, the other passing nearly vertically downwards to the left of the middle line. The tumour can be moved as a whole excepting the portion on the right side above the umbilicus. The latter seems to be more fixed, and there is a good deal of tenderness over it. The tumour appears to be solid, but cannot be traced into the pelvis. The fingers can be pressed in deeply between the tumour and the pubes. The greatest girth is  $41\frac{1}{2}$  inches, at a distance of  $1\frac{1}{2}$  inches above the umbilicus. The urine is acid, sp. gr. 1020; contains no albumen.

January 10th.—There is an offensive discharge from the vagina, and the temperature, which was normal during the first four days, rose yesterday to  $102\cdot4^{\circ}$  at noon, and reached  $104^{\circ}$  at midnight. This morning it is  $100\cdot8^{\circ}$ . Patient has had a somewhat restless night, and there is more general pain over the abdomen. On vaginal examination the cervix uteri is found to be of normal size; the uterine canal is directed slightly to the left, and is  $3\frac{3}{4}$  inches in length. Any movement of the large hard mass in the abdomen is communicated to the cervix.

The difficulty in this case was in deciding whether the acute pain the patient suffered from, and the tenderness over the portion of tumour to the right of and above the umbilicus, were due to inflammatory change in a portion of the main mass, or whether it was due to a separate lesion of an in-

flammatory and probably suppurative nature starting in the region of the gall-bladder or duodenum. Dr. Toller was called in to see the case, and was of opinion that the present acute symptoms were in connection with the upper and right part of the tumour. Dr. Cullingworth decided to explore the abdomen.

*Abdominal section* (January 11th, 1895).—An incision  $6\frac{3}{4}$  inches long having been made, the hand was introduced into the abdomen, and the tumour found to be free from adhesions. The tumour was seen to be a subperitoneal fibroid of the uterus, but owing to the width and vascularity of the pedicle it was thought best to remove the uterus with the tumour. The left broad ligament was punctured in the lower part, the opening enlarged with a pair of forceps, and a double ligature passed through. It was then secured in two places, the outer embracing the infundibular pelvic ligament, and the inner being tied close up to the uterus, and was divided between the two. Next the left uterine artery was sought for, and a ligature was passed round it by means of a curved needle on handle, and the artery was secured by a stay-knot. The same process was now carried out on the right side. The uterus was now divided transversely by means of two incisions over the anterior and posterior surfaces, and the tumour with the upper part of the uterus was removed. The uterine canal was seen in the centre of the stump. There was very little bleeding. The stump was now trimmed by the removal of a good deal of tissue around the cervical canal, and in this way two thin flaps, consisting for the most part of peritoneum with a little subjacent muscular tissue, were left. The stump was now covered in by silk Lembert's sutures, which brought the peritoneal surfaces into apposition in a transverse line. The pelvic cavity was next cleansed. On exploring the right hypochondrium it was found that, owing to some inflammatory condition, the omentum was firmly adherent to the anterior abdominal wall, and the edge of the right lobe of the liver. It was also much thickened. It was not thought advisable to interfere with these adhesions, as no fluctuation could be detected in any part of this mass. The wound was therefore closed by ten deep sutures of silkworm gut, and before tying these a continuous catgut suture was passed, bringing

together the edges of the rectal aponeurosis. Patient bore the operation well.

The parts removed consist of the upper part of the uterus, and a large subperitoneal fibroid growing from it. The tumour is reniform in shape, and measures  $7\frac{1}{2}$  by 4 by 5 inches. It springs from the fundus by a broad pedicle measuring  $1\frac{3}{4}$  inches in diameter. The surface is smooth and lobulated, owing to the presence of many projecting masses of fibroids. On section the tumour has the usual appearance of a hard fibroid, and is free from all signs of œdematous change. The portion of the uterus removed presents three or four small subperitoneal fibroids, and several other small interstitial fibroids are seen on section. The appendages removed are normal, except for a small cyst which is present in the left ovary. The weight of the tumour removed was 3 lbs. 11 ounces.

January 12th.—There is a little blood-stained vaginal discharge, showing that the canal of the cervix is allowing good drainage. The temperature last night was  $101^{\circ}$ , but has fallen this morning to  $97.8^{\circ}$ . Patient has some abdominal pain. Later on in the day she was not so well, and her condition gave rise to some anxiety. Her face was flushed, and her breathing rapid; temp.  $101.2^{\circ}$ . She complained greatly of thirst, and her tongue was very dry and sore. There was no pain or distension of the abdomen, and flatus had passed freely throughout the night.

14th.—Patient has much improved. She is quieter, and looks better. The abdomen is not distended. There is still some vaginal discharge, which is, however, quite inoffensive. The bowels acted twice yesterday evening after an enema.

15th.—The condition is much the same. She is very drowsy, and sleeps a great deal. The temperature rose last night to  $102.8^{\circ}$ . This morning it is  $99^{\circ}$ . She complains of some pain in the right side of the abdomen above the level of the umbilicus, similar to what she had before the operation.

17th.—Patient slept well last night. There is now practically no discharge from the vagina. The mass in the right hypochondrium seems rather smaller; there is no pain or tenderness over it.

19th.—The stitches were removed yesterday afternoon



from the abdominal incision, and some amount of purulent, blood-stained fluid escaped from the lower part of the wound. Immediately after this patient had a severe fit of coughing, and on examining the wound it was found that the whole incision had opened up, exposing the omentum. The edges of the wound were at once re-sutured with silkworm gut, and the wound was dressed with iodoform gauze. This morning patient seems quite comfortable, and has passed a good night.

21st.—There is not much change in the patient's condition. The temperature rose to  $103.4^{\circ}$  last night, but this morning it is  $98.6^{\circ}$ . She is much troubled with bronchitis, and has some difficulty in coughing up the phlegm.

22nd.—Patient is better, but the temperature continues to rise every night. Mr. Battle was called in to examine the swelling in the right hypochondrium, which was still tender, and which it was thought probable was the cause of the continuance of the fever. As there was nothing in the condition of the abdominal wound or in the pelvis to account for the continued elevation of temperature, it was thought most probable that there was some suppuration in the swelling in the right hypochondrium.

24th.—Patient was transferred to the Surgical wards under the care of Mr. Battle.

On the 30th Mr. Battle operated on the patient, and evacuated a quantity of highly offensive pus from an abscess, the walls of which were covered by omentum, and adherent to the abdominal wall just below the right costal margin. The abscess cavity extended over to the left of the middle line, and its walls were lined by granulation tissue. No communication with the bowel was discovered. It was apparently connected with the gall-bladder, and its actual source was not ascertained. It was thought not improbable that it was the result of a perforation of a duodenal or gastric ulcer. The cavity was emptied, washed out, and drained with a rubber tube.

Patient was relieved temporarily by the operation, but subsequently had a relapse and gradually failed in strength. She died on the 25th February, 1895.

CASE 22. *Fibro-myomatous tumour of the uterus associated*



*with a five months' pregnancy ; abdominal hysterectomy with intra-peritoneal treatment of the stump ; death on the fourth day after the operation* (from notes by C. W. Grant Wilson). —M. A. S—, æt. 46, residing at Merthyr Tydfil, admitted 1st October, 1895 ; died 14th October, 1895.

Catamenia commenced at the age of fourteen, usually lasted three days, of the twenty-eight-day type. Patient was married at the age of twenty-two, and has had four children and no miscarriages. The last child was born twelve years ago. All her confinements have been easy and natural in every way. Since the birth of her last child the catamenia have been quite regular and free from pain up till about three years ago, but since then they have often been irregular and somewhat increased in amount. For the last five months patient has had amenorrhœa, the last period having occurred early in May. In the beginning of July she began to vomit at all times during the day, especially in the morning, and this continued till four weeks ago. She noticed her breasts enlarging, and thought herself to be pregnant. During the first week in August she had severe bearing-down pain in the abdomen, and thought she was going to have a miscarriage. She consulted her doctor, who gave her some medicine, but she continued to suffer from these pains at intervals up to the present time. She thinks she has been getting stouter for the past twelve months, but until she became pregnant she considered this increase in size was due to her getting stouter. She has noticed that her abdomen is larger than it has ever been at the same period of pregnancy before. Patient first felt foetal movements in the third week in August. For the past ten days she has had no pain. The pain has never at any time been sufficient to keep her in bed, and she has been able to see about her household duties.

On admission, patient is a healthy though very nervous woman, complaining of enlargement of the abdomen for twelve months and attacks of pain for the past four months. The breasts are enlarged ; there is a faint secondary areola, but no secretion exudes from the nipple on pressure. The abdomen is distended by a large tumour which rises up to a level of 2 inches above the umbilicus on the right side,

but the most prominent part of the tumour occupies the middle line of the abdomen. The tumour rises up out of the pelvis, and is dull on percussion. The tumour is for the most part smooth and elastic, but on either side of the middle line two hard, bossy projections, about the size of a Tangerine orange, can be felt. The uterine souffle is well heard over the greater part of the mass. The left portion of the tumour can be made out to be the part containing the fœtus, fœtal movements having been felt over this region. The girth at the level of the umbilicus is 34 inches. The greatest girth is at a distance of  $2\frac{1}{2}$  inches below the umbilicus, and is 36 inches. The urine is acid, sp. gr. 1030; contains no albumen and no sugar. Temperature and pulse normal.

October 5th.—Patient has slept badly since her admission, and has had a good deal of abdominal pain. She has been sick each morning after breakfast. On vaginal examination the cervix is found to be practically obliterated; the lips of the cervix are small and hard, and are situated on a level with the summit of the symphysis pubis. The vaginal roof is depressed by a hard, smooth, round swelling, which is continuous with a mass completely filling the hollow of the sacrum. On rectal examination this mass is found to bulge into the bowel and almost entirely obstruct it.

7th.—Patient's rest was again disturbed owing to the pain in her abdomen. No fœtal movements were detected on examining the abdomen. As it appeared certain the child could not be born in the natural way if the pregnancy were allowed to go on to term, it was thought that the safest thing for the patient was to perform abdominal section and remove the pregnant uterus with the tumour.

*Abdominal section* (10th October, 1895).—A median incision having been made and the peritoneum opened, the tumour presented in the wound, bluish red in colour, and with several nodular whitish projections from its surface. On introducing the hand into the abdomen, the tumour was found to be free from adhesions. The incision was now enlarged upwards, so as to measure in all  $7\frac{1}{4}$  inches, and the whole was brought out through the wound and protected with a hot towel. A flat marine sponge was placed in the

upper part of the wound to keep the intestines back, and one silkworm-gut suture was inserted about the middle of the wound for the same purpose. The upper part of the right broad ligament was now ligatured in two places, the outer including the infundibulo-pelvic ligament and the ovarian artery, and the inner being tied close up to the uterus, and preventing regurgitation of blood from that organ. The broad ligament was now divided between the two, and in this way the upper part of the tumour was freed. The broad ligament on the left side was now treated in a similar way. Some smart venous hæmorrhage was now seen coming from the anterior and lower part of the tumour on the left side. All attempts to control this by means of artery forceps and clamped forceps failed, and it was not stopped till the left uterine artery had been secured by a silk ligature passed under it by means of a long pedicle needle. The uterine artery on the right side was now secured in a similar way. Two curved incisions were now made over the anterior and posterior surfaces of the tumour through the peritoneum and the capsule of uterine tissue, and the tumour was then shelled out of the lower segment of the uterus, partly by means of the fingers, and partly by the aid of the scalpel. In this way the whole tumour with the fœtus enclosed in the amniotic sac was removed entire, the latter not having been disturbed during the removal. The stump was then carefully trimmed, and the peritoneal flaps brought together in the usual mannner. The bleeding from the stump was entirely controlled by the separate ligature of the ovarian and uterine arteries on either side, and the amount of blood lost during the operation was not increased owing to the patient being pregnant. The abdominal cavity was now cleansed with marine sponges, and the edges of the wound brought together by eleven sutures of silkworm gut. The edges of the rectal sheath were approximated by means of a buried catgut suture.

The parts removed consist of the pregnant uterus, which is the seat of fibroid growths, with the ovaries and Fallopian tubes attached. The uterus presents a number of sub-peritoneal fibroids over the upper and anterior surface, some of which are pedunculated and some sessile ; these vary in



size from a walnut to a hen's egg. Projecting down from the lower part of the uterus is a fairly firm mass of fibromyomatous growth which filled up the whole pelvis, and has a thin covering of peritoneum over the greater part of its surface. On section this tumour is seen to be undergoing commencing necrotic change. The cut surface of the uterus presents a number of hard fibroid tumours of various sizes, which are situated in the muscular wall around the internal os, and another fibroid as large as an orange is seen projecting from the right and lower aspect of the uterus. On making a longitudinal incision through the posterior wall of the uterus, the cavity contained a female foetus ten inches long, presenting by the breech. The placenta, which measured four inches in diameter, is attached at the upper and left side of the uterus.

October 11th.—Patient has had no sleep, but has not been sick. A vaginal discharge commenced almost at once after the operation. Patient's temperature is  $99.6^{\circ}$ , pulse 112.

12th.—The vaginal discharge is about the same in amount. The wound was dressed to-day, and is looking quite healthy. Patient was slightly sick this morning.

13th.—She again had a restless night, partly owing to the ward being somewhat noisy. An enema was given yesterday without result. At 6 p.m. she had an ounce of castor oil, and at 10 p.m. a second enema with fair result. To-day the abdomen is more tense, and patient has an anxious expression; her tongue is dry, and the pulse rapid, 136. She has had two simple enemata to-day with good result. She is, however, constantly sick, so was ordered to be fed with nutrient enemata.

14th.—Patient is very much weaker, the sickness has persisted in spite of the rectal feeding, and the distension of the abdomen is considerable. She rapidly got worse during the day, and died at 2 p.m. Since the operation the temperature has usually varied between  $98^{\circ}$  and  $99^{\circ}$ ; it has only on two occasions reached  $100^{\circ}$ , namely, at 4 a.m. at midnight on the 11th October. No autopsy was permitted.



# STATISTICAL REPORT

## OF

# THE OPHTHALMIC DEPARTMENT

## FOR THE YEAR 1895.

BY HERBERT G. TOOMBS, M.R.C.S.ENG., L.R.C.P.LOND.,  
LATE OPHTHALMIC HOUSE SURGEON.

DURING the year there were 3842 new out-patients (exclusive of renewed letters); 204 in-patients were admitted, and 199 major operations were performed. Total attendances in Out-patient Department 9676.

### *Table of In-patients.*

Cataract, senile . . . . .	42	Detachment of retina . . . . .	5
„ lamellar . . . . .	10	Papillitis . . . . .	2
„ congenital . . . . .	2	Staphyloma of cornea . . . . .	5
„ traumatic . . . . .	4	Adherent leucoma . . . . .	3
„ concussion . . . . .	1	Occluded pupil . . . . .	1
„ diabetic . . . . .	1	Conjunctivitis, simple . . . . .	1
Membrane after extraction . . . . .	20	„ membranous . . . . .	3
Glaucoma, acute . . . . .	9	Ectropion . . . . .	3
„ subacute . . . . .	4	Entropion . . . . .	2
„ chronic . . . . .	1	Gonorrhœal ophthalmia . . . . .	1
Iritis, rheumatic . . . . .	2	Phlyctenular ophthalmia . . . . .	2
Irido-cyclitis . . . . .	1	Lacrimal mucocele . . . . .	3
Kerato-iritis . . . . .	3	Granular lids . . . . .	1
Keratitis dendritica . . . . .	1	Graves's disease . . . . .	1
Interstitial keratitis . . . . .	5	Strabismus, convergent . . . . .	3
Suppurative keratitis . . . . .	2	„ divergent . . . . .	6
Sympathetic ophthalmitis . . . . .	1	Empyema of frontal sinus . . . . .	1
Kerato-malacia . . . . .	1	Suppurative panophthalmitis . . . . .	1
Corneal ulcer, hypopyon . . . . .	8	Cellulitis of upper lid with peri-	
Do., chronic and relapsing . . . . .	9	ostitis of frontal bone . . . . .	1
Retinitis . . . . .	2	Papilloma of conjunctiva . . . . .	1

Congenital ptosis . . . . .	1	Wound of globe . . . . .	20
Burn of conjunctiva and cornea . . . . .	2	Hæmorrhage into vitreous . . . . .	1
Foreign body in cornea . . . . .	2	Sarcoma of orbit . . . . .	1
Shrunken globe . . . . .	2		—
			204

The following is a list of the chief operations performed :

Extraction of hard cataract . . . . .	39	Evacuation of frontal sinus em- pyema . . . . .	1
Operations for treatment of 12 soft cataracts . . . . .	27	Removal of orbital growth . . . . .	1
Needling of congenital cata- ract . . . . .	17	Plastic operations upon upper and lower eyelids after burns . . . . .	4
Needling of traumatic cata- ract . . . . .	1	For ectropion . . . . .	2
Curette evacuation . . . . .	8	For entropion . . . . .	2
Suction extraction . . . . .	1	For congenital ptosis . . . . .	1
Discission of membrane after ex- traction . . . . .	20	Extirpation of lachrymal sac by dissection . . . . .	2
Iridectomy . . . . .	35	Conjunctival closure of corneal wound . . . . .	1
For acute and subacute glau- coma . . . . .	14	Blepharoplasty . . . . .	1
For chronic glaucoma . . . . .	2	Tenotomy of internal rectus . . . . .	1
Preliminary to extraction . . . . .	9	„ of external rectus . . . . .	7
For prolapse of iris . . . . .	3	„ of superior rectus . . . . .	1
„ artificial pupil . . . . .	7	Advancement of internal rectus . . . . .	6
Division of anterior synechia . . . . .	4	Excision of eyeball . . . . .	38
Cauterisation of conjunctiva . . . . .	1		—
„ of cornea . . . . .	5		199

*Analysis of Cataract Operations.*

I. Extraction of hard cataract—39 cases.

The section was made upwards in all.

Of Mr. Nettleship's cases, an iridectomy was done at the time of extraction operation in all, with the exception of Nos. 2, 3, and 11, in which the iridectomy had been performed at an earlier date.

In Nos. 1, 5, 9, and 13 the section was made without the use of fixation forceps or lid speculum.

Of Mr. Lawford's cases, in Nos. 21, 28, and 30 the extraction with iridectomy was performed in two stages. In the remainder of the cases iridectomy was done at the same time as extraction.

In all the cases atropine, 1 per cent., was used to the eye when the wound had sufficiently closed, in the greater number of cases on the third day.

A freshly made 2 per cent. solution of hydrochlorate of cocaine was the anæsthetic used in the majority of the cases. In case No. 6, a patient of very advanced age, it was considered advisable to administer ether and chloroform. In the case of No. 28 ether and chloroform were given, the patient being devoid of sufficient self-control.

In Nos. 30 and 32 ether was the anæsthetic employed.

II. Operations for removal of soft cataract—12 cases.

Mr. Nettleship's five cases were of the lamellar type, and were treated by needling or needling with curette evacuation.

Of Mr. Lawford's seven cases, in three curette evacuation was performed after needling. No. 50, which was a soft cataract of traumatic origin, was treated by needling and a subsequent curette evacuation.

The suction syringe was used in the case of No. 46.

TABLE I.—*Extractions of Hard Cataract.*—*Mr. Nettleship's Cases (17).*

Page in Bk. '95.	Report No.	Name and date.	Sex.	Age.	Anæsthetic.	Operation.	Progress of case.	Secondary operation.	Result.
79	1	M. A. S. Jan. 7th	F.	57	Cocain	Left; extraction upwards with iridectomy; some soft lens matter came away after nucleus; no lid speculum or fixation forceps used	Wound leaked on third day after operation; subsequent progress satisfactory; some membrane cutting needle used; good gap made in membrane	Oct. 23rd— Left needed; cutting needle used; good gap made in membrane	Oct. 28th— + 11 Ds. = $\frac{6}{6}$ partly. + 1.5 Deyl. + 15 Ds. = 1 J. + 1.5 Deyl.
154	2	S. C. Apr. 3rd	F.	63	"	Preliminary iridectomy had been done upwards in left, June 16th, 1893. Left; extraction upwards; lens withdrawn with the sharp hook; a little rather thin vitreous escaped after the removal of the lens	Posterior adhesion of iris at inner pillar to membrane in pupil	Dec. 10th— Left needed	Dec. 23rd— + 12.5 Ds. = $\frac{6}{3\frac{1}{2}}$ . + 1.5 Deyl. + 16 Ds. = 1 J. + 1.5 Deyl. = slowly.
5	3	C. C. Apr. 30th	M.	54	"	Preliminary iridectomy performed on Feb. 5th. Right; extraction upwards; rather large incision; the lens moved under the cystitome; some soft lens matter expressed, followed by a small nucleus; some vitreous then presented in the wound, but none was snipped off. Mr. Fisher operated	Wound closed, but scar bulged a good deal at first; T. kept below n.; much opaque lens matter in pupil gradually underwent absorption, leaving only a thin capsular membrane. Scar of extraction is cystoid at nasal extremity	Aug. 6th— Right needed, one needle; gap towards inner side of capsule	Oct. 7th— + 4 Ds. = $\frac{6}{3}$ full, + 4 Deyl. = $\frac{6}{3}$ partly. + 11 Ds. = 1 J. + 4 Deyl.
12	4	E. B. May 3rd	F.	58	"	Right; extraction upwards with iridectomy; counter-puncture too far in sclera; lens did not come readily through rather short incision; some hardish flakes sealed off first before nucleus came out; a little soft lens matter remained. Mr. Fisher operated	Right; some opaque lens matter in pupil; iris a little drawn back at pupillary edge. Eye did not become quiet, but remained congested, and on June 5th iris appeared muddy, and there was a small collection of lymph in a. c. June 11th.—Left showed some ciliary congestion at lower part; iris and cornea bright, but	April 15th, 1896— Cocain. Right needed with cutting needle; good central gap	April 23rd, 1896— + 11 Ds. = $\frac{6}{2\frac{1}{2}}$ . $\frac{1}{8}$ 1 l. + 2 Deyl. + 15 Ds. = 1 J. fairly well. + 2 Deyl.



155	5	C. L. May 8th	F. 65	Left; extraction upwards with iridectomy; iris pricked with point of knife near counter-puncture; lens hard, and came out complete. No speculum or fixation forceps employed	Favorable	None	June 12th— + 8 Ds. = $\frac{6}{1}$ partly. + 1 D cyl. + 12 D. = 6 J.
156	6	R. B. May 24th	M. 96 Ether and chloroform	Left; extraction upwards with iridectomy; some soft lens matter expressed with eurette after extraction of nucleus. Cornea collapsed, forming a concavity forwards. Good coloration in iris	Wound healed satisfactorily; pupil dilated well to atropine; a little membrane left in pupil. Two or three days after leaving hospital there occurred an extensive hemorrhage into vitreous of the operated eye, followed by much pain and prolonged congestion. Ultimately the blood was to a large extent absorbed, and patient became able to see large objects	—	Words of 14 J. with a lens.
17	7	W. S. June 13th	M. 75 Cocain	Right; extraction upwards with iridectomy; free bleeding from wound; lens large and very hard	Wound leaking for the first four days after operation; a. c. reformed on fifth day; subsequent progress satisfactory; thin membrane in pupil	Oct. 23rd— Right needled; fine streak of vitreous protruded forward to puncture on withdrawing needle	Dec. 9th— + 11 D. = $\frac{8}{1}$ , 2 letters. + 15 D. = 1 J., a few words.

later the latter became hazy and the tension of left increased; no keratitis punctata. July 20th.—left; iridectomy upwards; fair-sized piece of iris removed up to ciliary edge. Left did not improve, and was excised Aug. 15th.



28	12	L. D. Sept. 19th	F. 64	"	Incision upwards, during making of which the patient moved her head, and the incision had to be completed by a second insertion of the knife. A wide iridectomy was done, as the above movement of the eye caused a separation of the iris at the inner side. Upon using cystitome the lens seemed moveable, as if it had become dislocated; a firm, central, whitish portion was extruded, and a little cortical soft substance. Conjunctival flap small. Mr. Fisher operated	Much striped keratitis; some opaque lens matter in pupil. On Sept. 21st patient became very restless; conjunctiva acedematous; a. c. destroyed, and there is now some hemorrhage on the front of the iris. Within about a fortnight the eye quieted down; iris much brighter, pupil irregular, does not dilate down and out; good deal of iritic membrane in pupil	— Oct. 30th— + 11 D. = $\frac{3}{16}$ . + 16 D. = 10 J.	unsuccessful. Dec. 14th— Left excised
160	13	P. G. Oct. 23rd	M. 72	"	Right; extraction upwards with iridectomy; lens easily moveable, and came away readily; a small portion broke off at the edge and was removed subsequently. No speculum or fixation forceps	On sixth day there was slight haze at upper part of cornea; iris bright, although later the pupil contained a good deal of membrane. Dec. 13th.—Upper part of coloboma clear; capsule in lower part	Dec. 13th— + 12 Ds. = $\frac{1}{16}$ partly. + 2 Deyl. + 18 Ds. } reads 2 J. + 2 Deyl. } & 3 J. well.	None
17	14	W. S. Nov. 4th	M. 75	"	Left; incision with Graefe upwards with iridectomy. After using cystitome there was an escape of a small quantity of very thin vitreous. Attempts to extract lens by expression or with the hook were unsuccessful. Little soft lens matter came away; cornea quite collapsed. Mr. Fisher operated	A. c. re-formed, but the wound was slightly bulged and cornea hazy, with much general congestion. Pupil did not react well to atropine, and iris remained muddy-looking	— Dec. 6th— Left excised	

Page in Bk. '95.	Report No.	Name and date.	Sex.	Age.	Anæsthetic.	Operation.	Progress of case.	Secondary operation.	Result.
35	15	H. H.	M.	65	Cocain	Left; section upwards with Graefe; iridectomy; some soft lens matter extruded, both before and following the removal of the nucleus; small conjunctival flap. Mr. Fisher operated the pupil becoming a little updrawn, and blocked by opaque lens matter and iritic exudation; several dilated vessels on iris. Under continuous treatment with atropine the eye became much quieter, but the pupil remained undilated, the inflammatory deposit contracting and bringing the upper ends of pillars of coloboma into contact	Slight striping in central part of cornea; pupil dilated well except at outer part, where there is a small posterior adhesion; some lens matter still in pupil. After leaving hospital in December patient had an attack of iritis, the pupil becoming a little updrawn, and blocked by opaque lens matter and iritic exudation; several dilated vessels on iris. Under continuous treatment with atropine the eye became much quieter, but the pupil remained undilated, the inflammatory deposit contracting and bringing the upper ends of pillars of coloboma into contact	—	Probable secondary operation later.
18	16	F. H. Nov. 20th	M.	66	"	Left; extraction upwards, Graefe used. In making incision iris was transfixed, and the counter-puncture made rather far back, so that the conjunctival flap was larger on nasal side. Iridectomy. Lens large, came away fairly readily with some soft lens matter; a little of the latter remained behind. Mr. Fisher operated	On evening of Nov. 25th pupil wide but a little irregular; iris quite bright, eye nearly quiet; later on eye became painful, and continued so all night. No history of injury. On 26th the lids and conjunctiva were cedematous, and a. c. full of blood. Dec. 2nd. — Congestion decreased; a. c. deep, for most part clear; good deal of capsular membrane now seen at outer part of pupil; inner side still obscured by shrunken blood-clot	None	Feb. 17th, 1896— +11 D. = $\frac{1}{12}$ . +14 D. = 1 J.
37	17	E. T. Dec. 10th	F.	56	"	Left; section with Graefe; iridectomy upwards; incision rather short; lens came out fairly easily, as it was very soft. Mr. Fisher operated	Favorable; lens matter remaining in pupil undergoing absorption, but still a fairly complete diaphragm except at outer side	May 6th, 1896— Left; cocaine; dense grey membrane needed with cutting needle; good gap below	May 11th, 1896— +7 D. = $\frac{1}{12}$ . $\frac{1}{4}$ 21. +13 D. = 1 J.



## Mr. Lawford's Cases (22).

4	18	S. C. Jan. 17th	F. 62	Right; extraction upwards with iridectomy; conjunctival flap in whole length; small iridectomy; lens came away well, leaving some soft cortex, which was subsequently expressed; pupil nearly black	Adhesion of iris at lower part of pupil to remains of lens capsule Right needed	July 19th— + 11 Ds. + 1.5 Deyl. = 12. + 15 Ds. = 1 J. fairly well. + 1.5 Deyl.
3	19	J. H. Jan. 17th	F. 63	Left; extraction upwards with iridectomy; incision almost at the sclero-corneal junction; small conjunctival flap at inner end; free bleeding from iris filling a. c., and obscuring iris and lens; lens brown colour and large, came out fairly clean; no cortex removed afterwards; pupil remained occupied by blood-clot	Patient is the subject of glycosuria. Operation wound slow in becoming firmly united; had some iritis. T. kept slightly less than right. March 29th.—Left quite quiet; T. n.; pupil occupied by partially opaque capsule and lens substance; dim fundus reflex obtained through lower part. Coloboma quite clear; no evidence of retinal detachment or vitreous opacity	— Not seen again.
7	20	J. D. Jan. 24th	M. 62	Right; extraction upwards with iridectomy; lens large, with hard nucleus, but with much semi-solid cortex, which came away adherent to nucleus; pupil left quite black	Pupil dilated slowly to atropine; iris drawn backward at papillary edge	May 6th— + 9 D. = 12.
9	21	P. T. Jan. 24th	M. 71	Preliminary iridectomy had been done on Nov. 22nd, 1894. Left; extraction upwards; incision fairly accurate at sclero-corneal junction; the iris was touched with the point of the knife close to the counter-puncture; lens large, hard, and brown, came out quite clean	Some opaque, soft lens matter and capsule in pupil and coloboma, chiefly in the latter	June 26th— + 10 D. = 12. + 15 D. = 1 J.

Case in file '95.	Report No.	Name and date.	Sex.	Age.	Aesthetic.	Operation.	Progress of case.	Secondary operation.	Result.
8	22	C. H. K. Jan. 24th	F.	53	Cocain	Right; extraction upwards with iridectomy; free bleeding from iris obscuring pupil; lens rather soft; a little soft cortex left behind was subsequently expressed	A good deal of opaque lens matter in pupil. Eye did not quiet very readily. T. less than left	—	Feb. 19th— +15 D. = 16 J. Patient not seen since.
13	23	E. S. Feb. 7th	F.	69	"	Left; extraction upwards; incision at the sclero-corneal junction; large conjunctival flap; iridectomy; lens large size	Favorable	None	July 5th— +10 Ds. = $\frac{1}{18}$ partly. +2.5 Dcyl. = 1 J. +14 Ds. = 1 J. +2.5 Dcyl.
14	24	R. R. Feb. 14th	F.	68	"	Left; extraction upwards with iridectomy; rather free bleeding into a. c. obscured view; lens distorted in extrusion; conjunctival flap small	Some opaque lens matter and capsule in pupil; inner half of pupil subsequently cleared	None	March 2nd— +9 D. = $\frac{1}{2}$ , $\frac{1}{18}$ nearly. +14 D. = 6 J.; some words of 4 J.
21	25	W. T. Mar. 8th	M.	66	"	Left; extraction upwards; incision at corneo-scleral junction; large conjunctival flap; iridectomy; lens large, fairly hard; a little soft lens matter subsequently removed; pupil nearly black	Favorable	Left needed, July 18th, 1895	July 23rd— +10 D. = $\frac{1}{2}$ partly. +14 D. = 1 J.
20	26	E. D. Mar. 8th	F.	67	"	Right; extraction upwards; incision rather short and counter-puncture too corneal; lens moved under the cystitome, but was easily extruded, being soft and sticky; a good deal of semi-transparent cortex was subsequently removed. Operation for acute glaucoma in 1893	Wound slow in closing; a. c. only partially re-formed at the end of the first week; had slight iritis, which yielded to treatment locally; posterior synechia formed to lens capsule	May 30th—Cocain; right needled; a good gap made in pupil at temporal side. June 27th — Ether; right iridectomy outwards after attack of secondary glaucoma; incision with keratome; iris removed with difficulty	Jan. 16th, 1896— +11 D. = $\frac{1}{3}$ . +16 D. = 12 J.

54	27	M. V. May 30th	F. 74	"	Left; extraction upwards with iridectomy; good conjunctival flap; lens nucleus hard and came away entire; much soft cortex removed at the time and after extrusion of the nucleus; pupil nearly black	Favorable	on temporal side of coloboma; a narrow piece of periphery of iris left in wound was returned after attempt to remove it	Nov. 28th— Left needed. Dec. 19th— Left needed; two needles used; membrane very tough Oct. 3rd— Right needed	Dec. 30th— + 11 D. = letters of $\frac{1}{12}$ . + 15 D. = 10 J. letters.
64	28	A. B. July 4th	F. 45	Ether and chloroform	Right; incision at upper corneal margin with Graefe; no speculum used; lens capsule opened freely with cystitome and lens extruded by pressure, but with difficulty; no loss of vitreous. Preliminary iridectomy was performed on Sept. 17th, 1894.	Slight congestion with fine lines on the cornea six weeks after operation; later became quite quiet		Sept. 13th, 1895— + 8 D. = $\frac{1}{6}$ partly. + 13 D. = 1 J.	
63	29	E. P. July 4th	F. 75	Cocain	Left; extraction upwards with iridectomy; incision at corneal junction; conjunctival flap; free bleeding from iris; lens hard, amber-coloured, came away quite clean	Good deal of keratitis striata	None	Sept. 3rd— + 10 D. = $\frac{1}{3}$ , $\frac{1}{6}$ partly. + 14 D. = 1 J.	
30	30	A. H. July 4th	F. 40	Ether	Right; preliminary iridectomy performed May 2nd, 1895; incision upwards; counter-puncture rather too peripheral; the scoop was introduced and a portion of the lens removed, and the remainder left <i>in situ</i> ; there was no escape of healthy vitreous, but an unusually large quantity of thin clear fluid came away during the corneal section; a. c. filled with blood after the removal of portion of the lens	Slight iritis; much soft lens matter in pupil; tension remained very low; pupil later cleared a little at the upper part; lens matter shrunken; flattening at the site of incision	—	Patient's general condition very feeble. No further operation deemed advisable.	

Page in Bk. '95.	Report No.	Name and date.	Sex.	Age.	Anæsthetic.	Operation.	Progress of case.	Secondary operation.	Result.
68	31	C. C. July 11th.	F.	71	Cocain	Left; incision upwards with Graefe; iridectomy; large, hard, opaque lens extruded; came away clean; good coloboma; pupillary area left quite black; patient behaved very badly during the first stage of the operation	Wound healed well; much striped haze of cornea; had an attack of iritis later with a small quantity of lymph deposit in lower part of a. c. Oct. 18th — Eye quiet but pupil blocked	None	Oct. 18th — + 10 D. = fingers at 4 ft. + 14 D. = 19 J.
67	32	I. B. July 11th	F.	62	Ether	Right; extraction upwards with iridectomy; incision a little short; some soft lens matter left after extraction of nucleus at upper part of coloboma, a portion of which was subsequently expressed	Favorable	"	Sept. 3rd — + 3.5 D. = $\frac{15}{8}$ . + 8 D. = 1 J.
79	33	W. T. Aug. 15th	M.	70	Cocain	Left; extraction upwards; incision rather short; conjunctival flap; iridectomy; lens large, and came out nearly complete; a little chippy cortex afterwards extruded	Favorable	Oct. 10th — Left needed; one needle used	Oct. 14th — + 10 D. = $\frac{15}{8}$ . + 14 D. = 1 J.
94	34	H. C. Oct. 3rd	F.	65	"	Right; incision with Graefe upwards; iridectomy; lens easily extruded by digital pressure on lower part of cornea; some soft lens substance around nucleus	Wound closed well; pupil dilated satisfactorily; had atropine irritation; quiet within a week later	None	Jan. 30th, 1896 — + 11 Ds. + 2 Deyl. = $\frac{15}{8}$ full. + 16 Ds. = 6 J. + 2 Deyl.
109	35	M. B. Oct. 24th	F.	76	"	Right; extraction upwards with iridectomy; free bleeding from iris; conjunctival flap; lens brown and hard; came out clean; cornea flaccid	Some haze of cornea and good deal of blood on front of iris; a. c. nearly obliterated on the third day after operation; adhesion of iris at outer side to capsule; thin silky membrane in pupil	"	Feb. 20th, 1896 — + 11 D. = $\frac{15}{8}$ 3 letters. + 16 D. = 6 J. words fairly.



108	36	M. M. Oct. 31st	F. 71	"	Left; extraction upwards with iridectomy; lens large and hard; came away readily; incision a little short at the inner side; conjunctival flap	Favorable	Jan. 30th, 1896—Left needed	Feb. 6th, 1896— + 10 D. = $\frac{3}{4}$ L. + 16 D. = 1 J.; few words 2 J. well.
121	37	S. T. Nov. 19th	F. 65	"	Left; incision with Graefe with iridectomy upwards; conjunctival flap; free bleeding after making incision; lens expressed readily; some soft lens matter removed afterwards	Some keratitis striata and blood-clot occupying coloboma; pupil dilated well; a central gap in delicate membrane in pupil, with a thin strand stretching across the aperture	April 2nd, 1896— Cocain; left; membrane divided with one needle about centre; a little bleeding from iris at upper part	April 10th, 1896— + 12 D. = $\frac{3}{4}$ L. + 16 D. = 1 J.
124	38	M. M. Nov. 28th	F. 62	"	Left; extraction upwards; incision rather more corneal than usual; iris fell over the knife during the incision and the periphery was cut; iridectomy of the pupillary half; lens extruded easily; hard nucleus; much soft cortex; pupil left nearly black	Wound healed satisfactorily; on the third day there was a good deal of oedema of the ocular conjunctiva, and also of the lids; atropine was commenced on the 4th day; pupil dilated well; oedema subsided in about a fortnight	Mar. 12th, 1896— + 11 D. = $\frac{3}{4}$ L. + 15 D. = 6 J.	Mar. 20th, 1896— + 11 D. = $\frac{3}{4}$ L. + 15 D. = 6 J.
37	39	A. S. Nov. 28th	M. 41	"	Left extraction of cataract; iridectomy had been done some years previously; incision upwards at sclero-corneal junction; lens capsule tough; lens large, very little soft cortex; vitreous presented, but none escaped; no prolapse of iris. Old irido-cyclitis and vitreous opacities	Wound of left grooved but not bulging; a thin membrane at lower part of pupil; iris much updrawn. Result of the iridectomy on Feb. 13th, 1896. favorable; the upper coloboma in iris remains larger than the lower one. A similar iridectomy downwards was done for the right eye on April 25th, 1895, the pupil in that instance being much updrawn (1894 Reports)	Feb. 13th, 1896—Left section of cornea below with keratome; iris seized with forceps and cut off; a fair gap made, but the iris remained bridged across at the lower limit of the pupil and coloboma of previous operation. The iris gave way at the pillars of the old coloboma	April 10th, 1896— + 7 D. = $\frac{3}{4}$ L. + 12 D. = 16 J.

TABLE II.—*Soft Cataracts. Mr. Nettleship's Cases (5).*

Page in file '95.	Name and date.	Sex.	Anæsthetic.	Operation.	Progress of case.	Secondary operation.	Result.
143 40	J. L. Jan. 21st	F.	18 Cocain	Left; curette extraction after needling of lamellar cataract, Jan. 7th; only a part of the swollen lens matter evacuated	Favorable ling of left; lens matter very soft; one needle used; upon withdrawing needle the lens matter floated to the periphery, leaving a fair central gap. Operation by Mr. Fisher	May 24th— further need-	Aug. 7th— +10 D. = $\frac{5}{8}$ +14 D. = 1 J. well.
105 41	G. H. Feb. 12th	M.	11 "	Right; curette evacuation after needling, Feb. 6th; lens much swollen; membranous capsule of lens drawn up to, if not incarcerated in, the corneal wound; lamellar cataract	Favorable; remaining lens matter gradually absorbed	—	July 5th— +12 Ds. +1.5 D. cyl. = $\frac{5}{8}$ partly. +16 Ds. 1 J. fair-ly well at 7 inches.
129 42	W. P. Mar. 12th	M.	14 "	Right; curette evacuation after needling operation, Nov. 30th, 1894, and again Mar. 5th, 1895; following the evacuation of the lens matter a bend of vitreous presented in the wound, which was cut off with iris scissors; clear central aperture in pupil. Operation by Mr. Fisher	Lens matter did not become absorbed at all readily, and required subsequent needlings	June 14th— Right needed. Oct. 30th— Right needed; one cutting needle used to enlarge the central aperture	Nov. 1st— +12 D. = $\frac{5}{8}$ partly. +15 D. = 1 J.
152 43	A. B. Apr. 3rd	F.	5 Ether	Right; needled, one needle; lens matter somewhat difficult to break up; former needling, Aug. 7th, 1894	Favorable	—	Unfinished.
147 44	F. B. Apr. 23rd	M.	5 "	Left; needled; one needle used; central woolly-looking remains of lens well broken up, leaving a central circular aperture;	Favorable	Oct. 30th— Left needed; cutting needle used; good	Nov. 1st— Estimated about +10 D. to +12 D.

*Mr. Lawford's Cases (7).*

6 45	A. C. Jan. 31st	F.	7 Ether	Right; needled very freely and lens matter broken up; had had three previous needling operations	Favorable	—	April 18th— + 10 D. = $\frac{9}{16}$ .
6 46	A. C. May 9th	F.	7 "	Left; suction extraction after needling, May 2nd	Much lens matter in pupil	—	Unfinished.
50 47	F. G. May 30th	M.	10 "	Right; curette-evacuation; lens matter sticky, and came out reluctantly; pupil left greyish; needling performed, May 23rd; lamellar cataract	Favorable	—	Jan. 30th, 1896— + 7 D. = $\frac{1}{2}$ partly. + 11 D. = 1 J. fairly well.
88 48	D. T. Aug. 27th	F.	13 Cocain	Left; needled freely; membrane very tough and needled with difficulty; several previous needlings performed elsewhere; lamellar cataract	Favorable	None	Oct. 4th— + 8 D. = $\frac{1}{4}$ . + 13 D. = $\frac{1}{4}$ J. at 7 inches.
88 49	D. T. Sep. 24th	F.	13 "	Right; curette evacuation after needling, Sept. 16th; lamellar cataract	Satisfactory; still a good deal of opaque lens matter, some of which has come forward to corneal incision	—	Patient returned to the country in October, 1895, and has not been seen since.
115 50	E. C. Nov. 7th	M.	5 Chloroform	Left; needled with one needle; lens capsule rather tough, and when opened allowed the escape of the shrunken irregular nucleus	—	Nov. 8th— Chloroform; incision with keratome at temporal side of cornea; curette evacuation; most of the lens matter came away, but a little remains up and in; a small incarceration of iris in the corneal wound occurred. Dec. 12th. — Chloroform; division of anterior synchia with Lang's knives	Favorable.

Page in Bk. '95.	Report No.	Name and date.	Sex.	Age.	Anes- thetic.	Operation.	Progress of case.	Secondary operation.	Result.
50	51	F. G. Dec. 13th	M.	10	Cocain	Left; curette evacuation of lamellar cataract; incision with keratome down and out near periphery of cornea; a little lens matter evacuated; iris prolapsed into wound, and was much bruised in attempts to replace it; a small portion remained nipped in the corneal wound; needling operation had been performed on Oct. 24th; eye kept fairly quiet until Dec. 12th, when there was slight ciliary congestion and rise of tension	—	Jan. 17th, 1896—Ether; left; curette extraction; lens matter came away with some difficulty; progress quite satisfactory	Feb. 28th— +7 D. = $\frac{1}{2}$ partly. +10 D. = 1 J.



R E P O R T  
OF THE  
DEPARTMENT FOR DISEASES OF THE SKIN,  
1895.

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By A. H. PAYAN DAWNAY, M.R.C.S., L.R.C.P.

TABLE I.—Statistical Table, 1895.

DISEASES.	Jan.		Feb.		Mar.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Totals.		Total.	
	M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		M. F.			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
CLASS I.— <i>Hyperæmia</i> :																												
Erythema . . . . .					1	1			1				1		1		1			2					3	5	8	
CLASS II.— <i>Exudationes</i> :																												
Erythema multiforme . . . . .	1				1	1			1		1		1				2	2	1	1	2	2	1		8	8	16	
Urticaria . . . . .	2	1	2						1	1	1	3	4	2	1		2	1	1	1	2	1			15	11	26	
Eczema . . . . .	5	7	3	3	5	6	5	5	7	13	11	9	4	9	7	6	9	7	3	8	11	7	5	8	72	88	160	
Furunculæ . . . . .			1	1					1	1															2	2	4	
Impetigo contagiosa . . . . .	1		3	2	1		4	3	1	2			1	3			2	3	3	2	1	1			21	13	34	
Ecthyma . . . . .																										1	1	
Dermatitis, infective . . . . .																										2	2	
Herpes zoster . . . . .																										1	1	
Dermatitis, infective . . . . .																										2	2	
Psoriasis . . . . .	4	3	1	2	4		3	1	8	1			5	3	4	1	4	2	3	3	3	2	2		25	42	67	
Pemphigus . . . . .																		1								1	1	
Cheirotopompholyx . . . . .																											4	
Lichen planus . . . . .										2						2											4	4
Dermatitis medicamentosa :																												
Carbolic acid . . . . .																											1	
Copaiva . . . . .									1				1								1				1	2	2	
Dermatitis herpetiformis . . . . .	1								1					1			1						1		1	4	5	
folliculorum . . . . .									1																	1	1	1
Keratosis palmaris . . . . .								1																	1	1	1	1
CLASS III.— <i>Hæmorrhagiæ</i> :																												
Purpuræ urticaria . . . . .																	1								1	1	1	1
CLASS IV.— <i>Hypertrophica</i> :																												
Keloid . . . . .																		1							1	1	1	1
CLASS V.— <i>Atrophica</i> :																												
Melano-leucodermia . . . . .																1	1		1						2	1	3	3
CLASS VI.— <i>Neoplasmata</i> :																												
Lupus vulgaris . . . . .	1	1			1	1		1	1							2									3	4	7	7



TABLE II.—*Age in certain Diseases.*

		Under 1 year.	1-5.	5-10.	10-20.	20-30.	30-40.	40-50.	50-60.	60-70.	70-80.	80-90.
Eczema . . . . .	M.	8	7	6	11	10	6	11	9	8	5	—
	F.	5	3	8	21	12	14	8	8	6	—	1
	Total	13	10	14	32	22	20	19	17	14	5	1
Impetigo . . . . .	M.	—	2	3	15	1	—	—	—	—	—	—
	F.	—	2	6	5	—	—	—	—	—	—	—
	Total	—	4	9	20	1	—	—	—	—	—	—
Psoriasis . . . . .	M.	—	—	2	10	6	4	3	1	1	—	—
	F.	—	—	5	17	8	5	3	2	1	—	—
	Total	—	—	7	27	14	9	6	3	2	—	—
Urticaria . . . . .	M.	—	2	1	5	2	3	2	—	3	1	—
	F.	—	—	2	2	1	1	2	—	—	—	—
	Total	—	2	3	7	3	4	4	—	3	1	—
Alopecia areata . . . . .	M.	—	2	4	14	5	—	4	—	—	—	—
	F.	—	—	6	5	7	5	—	2	—	—	—
	Total	—	2	10	19	12	5	4	2	—	—	—
Tinea tonsurans . . . . .	M.	—	9	20	6	—	—	—	—	—	—	—
	F.	1	6	8	—	—	—	—	—	—	—	—
	Total	1	15	28	6	—	—	—	—	—	—	—



STATISTICS  
OF THE  
THROAT DEPARTMENT OF ST. THOMAS'S  
HOSPITAL IN 1895.

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THE Statistics have been compiled by Mr. E. C. Stabb, F.R.C.S., Chief Assistant to the Throat Department, to whom I wish to express my thanks for the accuracy with which he has accomplished his task, and for the most valuable help in the Department he has given me ever since his appointment.

FELIX SEMON.

*Total Number of New Cases treated in the Special Department for Diseases of the Throat during the year 1895.*

	Number of cases.		
	Male.	Female.	Total.
A. Pharyngeal Affections . . . . .	311	299	610
B. Laryngeal Affections . . . . .	73	70	143
C. Affections of Nose and Accessory Cavities . . . . .	9	21	30
D. Buccal and Esophageal Affections . . . . .	6	10	16
E. General and Miscellaneous Affections . . . . .	50	53	103
F. Renewed Letters . . . . .	35	35	70
Totals . . . . .	484	488	972

*A. Pharyngeal Affections.*

Disease.	Number of patients.		
	Male.	Female.	Total.
1. Acute and subacute pharyngitis . . . . .	56	55	111
2. Chronic pharyngitis . . . . .	13	14	27
3. Granular pharyngitis . . . . .	16	18	34
4. Syphilitic ulceration of pharynx . . . . .	5	—	5
5. Pharyngitis sicca . . . . .	1	1	2
6. Growth of pharynx, ? nature . . . . .	1	—	1
7. Malignant growth of pharynx . . . . .	1	—	1
8. Acute and subacute tonsillitis . . . . .	107	91	198
9. Chronic tonsillitis and hypertrophied tonsils . . . . .	37	69	106
10. Peritonsillitis . . . . .	1	2	3
11. Peritonsillar abscess . . . . .	7	1	8
12. Syphilitic ulceration of tonsils . . . . .	6	3	9
13. Malignant growth of tonsil . . . . .	1	—	1
14. Pharyngeal neuralgia . . . . .	—	2	2
15. Adenoid vegetations . . . . .	27	25	52
16. Adenoids and hypertrophy of tonsils . . . . .	32	17	49
17. Adenoids and nasal polypi . . . . .	—	1	1
Totals . . . . .	311	299	610

*B. Laryngeal Affections.*

Disease.	Number of patients.		
	Male.	Female.	Total
1. Acute and subacute laryngitis . . . . .	35	32	67
2. Chronic laryngitis . . . . .	14	13	27
3. Tuberculous laryngitis . . . . .	9	3	12
4. Lupus of larynx . . . . .	1	—	1
5. Syphilitic ulceration of larynx . . . . .	6	3	9
6. Doubtful ulceration of larynx . . . . .	—	2	2
7. Herpes of larynx . . . . .	—	1	1
8. Pachydermia of larynx . . . . .	2	1	3
9. Neoplasms {	1	1	2
	—	1	1
	1	—	1
	—	1	1
10. Gumma of ventricular band . . . . .	—	1	1
11. Ankylosis of arytaenoid cartilage . . . . .	1	—	1
12. Paralysis {	—	1	1
	—	1	1
13. Functional aphonia . . . . .	1	8	9
14. Aërial fistula following tracheotomy . . . . .	1	—	1
15. Stridor, ? cause . . . . .	—	1	1
16. Tracheitis . . . . .	1	—	1
Totals . . . . .	73	70	143

*c. Affections of Nose and Accessory Cavities.*

Disease.	Number of patients.		
	Male.	Female.	Total.
1. Epistaxis . . . . .	1	—	1
2. Acute and subacute rhinitis . . . . .	—	6	6
3. Atrophic rhinitis . . . . .	1	2	3
4. Hypertrophic rhinitis . . . . .	1	3	4
5. Naso-pharyngeal catarrh . . . . .	1	5	6
6. Ozæna . . . . .	—	1	1
7. Syphilitic ulceration . . . . .	1	2	3
8. Tuberculous ulceration of ala . . . . .	—	1	1
9. Mucous polypi . . . . .	4	1	5
Totals . . . . .	9	21	30

*D. Buccal and Oesophageal Affections.*

Disease.	Number of patients.		
	Male.	Female.	Total.
1. Stomatitis . . . . .	1	3	4
2. Chronic superficial glossitis . . . . .	1	—	1
3. Mucous tubercles of mouth . . . . .	—	1	1
4. Syphilitic ulceration of uvula . . . . .	—	1	1
5. Syphilitic ulceration of palate . . . . .	2	1	3
6. Gumma of base of tongue . . . . .	—	1	1
7. Hypertrophy of lingual tonsil . . . . .	—	1	1
8. Cleft palate . . . . .	—	1	1
9. Malignant disease of œsophagus . . . . .	2	—	2
10. Swallowed pin . . . . .	—	1	1
Totals . . . . .	6	10	16

*E. General and Miscellaneous Affections.*

Disease.	Number of patients.		
	Male	Female.	Total.
1. Anæmia . . . . .	—	2	2
2. Dyspepsia . . . . .	1	2	3
3. Constipation . . . . .	—	1	1
4. Bronchitis . . . . .	2	1	3
5. Pleurisy . . . . .	—	1	1
6. Phthisis . . . . .	—	1	1
7. Chronic adenitis of neck . . . . .	2	—	2
8. Tuberculous adenitis of neck . . . . .	1	1	2
9. Parotitis . . . . .	2	1	3
10. Cyst of thyroid gland . . . . .	1	1	2
11. Enlarged thyroid gland . . . . .	1	5	6
12. Exophthalmic goitre . . . . .	—	1	1
13. Globus hystericus . . . . .	—	1	1
14. Climacteric neurosis . . . . .	—	1	1
15. Lupus of neck . . . . .	—	1	1
16. Lisp . . . . .	—	1	1
17. Syphilis . . . . .	10	7	17
18. Otitis media . . . . .	2	4	6
19. Medical . . . . .	4	6	10
20. Surgical . . . . .	1	—	1
21. Nil, debility, &c. . . . .	23	15	38
Totals . . . . .	50	53	103



*The following operations, under chloroform administered by Dr. Low, were performed in the Out-patients' room during the four months from September to December, 1895.*

Disease.	Number of patients.		
	Male.	Female.	Total.
1. Removal of adenoids . . . . .	7	8	15
2. Removal of adenoids and tonsils . . . . .	18	7	25
3. Removal of inferior turbinated bones . . . . .	—	1	1
4. Removal of recurrent nasal polypi . . . . .	—	1	1
Totals . . . . .	25	17	42



## THE ELECTRICAL DEPARTMENT.

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By H. G. TURNEY, M.B., M.R.C.P.

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THE report of this department will again consist of a brief clinical record of cases which appear to have some special interest. The numerical method, to have any value, requires a much larger supply of material than lies at our disposal, and it seems better, under the circumstances, to bring forward clinical fragments rather than attenuated statistics. Still, the Electrical Department, even if its career have been unobtrusive, has been steadily consolidating its position, and can now claim to have satisfied a real want of the Hospital both in the wards and the out-patient room. Little need be said this year about apparatus. The only fresh development has been the steadily increasing use of the alternating main current by means of a transformer. Applied through a bath, this method of application has been found a great saver of time and labour without loss of efficiency. The stimulating effect of the current on the tissues seems to be at least as great as that provided by the coil or the battery.

The following notes refer to various cases that have been treated during the past year.

*Lead palsy (spinal and peripheral type).*—W. R—, æt. 40, has been a painter all his life. For the last four or five

months he has noticed increasing weakness of his wrists and hands.

“On examination there is a typical blue line on the gums. The extensor muscles of the wrist and fingers on both sides are completely paralysed and moderately wasted. They give a ready but sluggish contraction to the galvanic current, none to the faradic. In addition there is extreme wasting of the abductor indicis, with well-marked but slighter change in the other interossei. The loss of power in these small muscles is distinct, but is certainly not more than proportioned to the wasting. All the interossei react readily to both currents, though the contraction is somewhat sluggish.”

In the course of the next three months the paralysis of extensors disappeared under treatment almost entirely, the atrophy of the interossei remaining unaltered.

The above is a good instance of the double type of lead palsy to which reference was made in last year's report. The changes in the intrinsic muscles of the hands are due to a lesion in the anterior cornua, and so have both the character and prognosis of muscular atrophy of spinal origin, while the apparently severer affection of the long extensors, being the result of peripheral degeneration, in a large proportion of cases ends in complete recovery.

*Lead palsy with cerebral symptoms.*—R. J—, æt. 30, has been a painter all his life. A year ago he suffered from wrist-drop, and in consequence of this gave up his occupation till April of this year, when he was compelled to return to it. There is no history of alcoholic excess or of any previous affection of the nervous system. The urine contains albumen. During the early part of August of this year the wrist-drop again appeared quite acutely, and almost simultaneously the patient had a series of fits. He was removed to the infirmary, where he long remained insensible. At present his only symptom is bilateral wrist-drop, the muscles showing reaction of degeneration.

It is possible that the severe cerebral symptoms may have been uræmic, but apart from the albuminuria there is nothing to point to this ; while, on the other hand, the almost simul-



taneous development of toxic symptoms elsewhere in the nervous system strongly suggests the same toxic agent as exciting the cerebral attack.

Two cases of peripheral neuritis which developed during the puerperal period have been observed during the year: the following brief abstract of the notes shows the most prominent features of each.

M. O—, æt. 37, complains of numbness and tingling of the ring and little fingers of the right hand for the past four months. Patient was confined a little over four months ago, the affection of the hand being noticed a fortnight later.

The left hand was also affected, but to a much slighter extent. The confinement was her first. No instruments were used, but patient had a very bad time, and was laid up for a month. There is no history of exposure to lead, and no blue line on the gums. Abuse of alcohol can be excluded almost with certainty, and of diphtheria, or, indeed, of any throat affection, there is no suspicion whatever.

The patient is a fairly healthy-looking woman with the following signs of disease. The interossei and other intrinsic muscles of the right hand (with the exception of those supplied by the median) are much wasted. The limb is held in the *main en griffe* position. Subjective anæsthesia is still present, but there is no objective proof of its existence. Trophic lesions of the skin are entirely absent, and no vasomotor change is noticeable. Loss of muscular power is considerable but not complete. The forearm is not wasted. Electrical examination shows in the affected muscles of the right hand loss of faradic irritability with slightly increased irritability to the galvanic current. The contraction is very sluggish, and the anodal closing contraction occurs before the cathodal. The reactions on the left side are normal.

The patient first attended in August, 1895. Improvement before long became manifest, and continued till February of this year, when the patient ceased to attend. There is little doubt that the case terminated in complete recovery.

A. F—, æt. 33, first came under observation on October 10th, 1895. She then stated that she had been losing the use

of her arms and hands since her confinement twelve months before. Save that instruments were used there seemed to be nothing noteworthy about the confinement itself, or the first week or two of the puerperal period which followed. But towards the end of the month, at a time when the general health was almost restored, patient noticed that she often dropped things owing to weakness of her hands, and this loss of power had since then steadily increased. It may be stated here that all the common causes of peripheral neuritis, so far as exclusion is possible, were excluded. Neither lead nor alcohol nor diphtheria were to be traced even by a rigorous cross-examination. The description of the physical condition runs as follows:—There is great weakness of the posterior interosseous group in both forearms, with a moderate amount of wasting. On the right side the supinator longus acts well, on the left it is much wasted and almost functionless. There appears also to be some wasting of the intrinsic muscles of the left hand, but all their movements are performed well. Electrical examination shows marked loss of irritability to the faradic current in the long extensors of the wrist and fingers. To the battery there is increased irritability with a typically sluggish contraction. Moreover A.C.C. > K.C.C. Sensation is quite unaffected. The patient has never noticed numbness or tingling in the affected parts, nor can any impairment of sensory functions be detected in other ways. In every other respect the physical condition is normal.

Unfortunately this patient has disappeared from observation. The incompleteness of the record is the more to be regretted since the affection was apparently still in an ingravescent stage.

It is hardly necessary here to discuss the differential diagnosis. The first case may be set down without any reasonable doubt as one of peripheral neuritis. In the second the absence of anæsthesia, and the lack of any indications of approaching recovery, suggest the possibility of anterior polio-myelitis, but at the same time the weight of evidence is strongly in favour of the other alternative.

Both cases show a general similarity in type. The affection involves the upper extremity in each, and in each

there is a more or less obvious symmetry of distribution. In both alike there is a complete absence, so far as previous history and physical examination can be trusted, of the toxic agents which ordinarily give rise to symmetrical polyneuritis, and further the resulting condition is one that in many respects fails to correspond with the type of paralysis so produced. Within the last few years the puerperal state has attained a recognised place among the causes of peripheral neuritis. The evidence has been and seems likely to remain altogether clinical, and even from this point of view it cannot be said that puerperal peripheral neuritis appears as a very characteristic entity,—such, for example, as we see produced by the action of lead or alcohol. Tuillant recognises three main types—brachial, crural, and general—according to the extent of the paralysis. Eulenburg, on a basis of nearly forty cases, suggests a classification into two groups, one mild and local, the other severe and general, the former group being again subdivided into a brachial and a crural variety. Of the two Eulenburg's classification is by far the better, though it must be owned that the conditions are so wide as practically to cover all forms of neuritis which can occur in a four-limbed animal. As we can base no argument on the form of disease produced, we must take our stand, on the one hand, upon the positive fact that the symptoms developed during the puerperium, on the other upon our power to exclude all other causes of neuritis. And in this last lies the difficulty. A conclusion which depends on proving a negative is notoriously uncertain from the logical point of view. Still clinical medicine is not logic, and often has to be content with what is practically probable rather than what is theoretically certain.

Under the heading "Occupation Neuroses" a case of writer's cramp accompanied by altered electrical reactions may be noted.

A. G—, æt. 18, has for the past two years been writing daily from 10 a.m. to 5 p.m. She first noticed weakness of the right hand three months ago at a time when she was working longer hours than usual. Soon after this she had



a severe fall on the right elbow, which was followed by some numbness of the ulnar side of the hand and the little finger. The symptoms which troubled her were pain in the hand extending up the arm, and spasm of the thumb muscles, which came on whenever she tried to write.

*On examination.*—The position of the hand in writing is of the worst description, the act being carried out entirely by the small muscles. The writing is extremely laboured, but there is no violent spasm such as to dislodge the pen. The abductor indicis and muscles of the ball of the thumb are definitely wasted. There is no anæsthesia or marked loss of power. The electrical reactions in the affected muscles are as follows:

Reduced irritability to the faradic and also to the constant current (A.C.C. at 4 m.a.). The first contraction occurs at the anode; it is not noticeably sluggish.

The accident introduces an element of doubt into the case. The electrical changes may have been due to that rather than the neurosis, though the severity of the injury seems hardly adequate to produce such a result.

Of the two other cases of writer's cramp, one followed an attack of typhoid fever, while for the other no cause except over-use could be ascertained.

A very severe case of sempstress's cramp of three years' duration was treated for some months by local gymnastics, if the term may be used, combined with massage. The case was a very unpromising one, and its difficulties were rendered insuperable by the neglect of the patient to persevere with the treatment.

A good many cases of injury to nerves were seen during the year, but few presented any remarkable features, and a short reference is sufficient for the purpose of this report.

The musculo-spiral was the nerve most commonly involved, and after it the ulnar. Once the lesion of the musculo-spiral was bilateral. The patient while in a state of delirium tremens was driven a long distance to an asylum with his arms tightly bound to his sides by a rope above the elbows. The resulting paralysis was of a very severe type, and lasted nearly a year.

The external popliteal is not very often picked out by



injury. During the twelve months there were two examples of this lesion, one due to fracture of the head of the fibula, the other to an injury of the lower epiphysis of the femur. In both an exploratory operation and nerve suture were performed. The result is perfectly satisfactory in the one case, and promises to be so in the other, though complete recovery is somewhat delayed.

*Apropos* of injuries to nerves, the following incident seems worth notice. R. D—, aged twenty-six, received a severe wound across the front of the right wrist, in which some tendons were divided, while the nerves suffered no injury. An artery forceps was inadvertently placed upon the ulnar nerve while the tendons were being sutured. The resulting paralysis was almost complete, the muscles showing full reaction of degeneration. In the course of three months recovery was very nearly established—in fact, voluntary power seemed as good as ever, although the electrical reaction was still that of degeneration. At this time patient had to occupy himself as a painter for some weeks. A month later all the old symptoms had reappeared in the region supplied by the ulnar nerve, the musculo-spiral showing no change either as regards voluntary power or electrical reactions. The wound had long been perfectly sound, and it is hardly conceivable that lead could have been absorbed locally. To make an obvious suggestion, the ulnar nerve may have formed a *locus minoris resistentiæ*, and so have fallen victim instead of the ordinarily more susceptible musculo-spiral.

The little that has been said as to treatment compared with diagnosis must not be taken to imply that that important function of the department has been neglected or despised. A large number of lesions of peripheral nerves have been treated, and with very satisfactory results, but in certainly the majority of these recovery would eventually have occurred under any circumstances. The results may have been—and as a fact were—sufficient to convince the observer at the time of the practical therapeutical value of electricity, but to carry that conviction home to the mind of a critical reader the record of two ample series of similar lesions treated respectively with and without the

current would be necessary. Neither length of time nor material has been sufficient for such a record, and in its absence it is felt better not to lay overmuch stress on the therapeutical aspect of the question. Functional disorders have provided very nearly as much material as the whole range of organic disease together, and in them, it is true, electricity has been found all but a panacea. Used in this way, however, the faradic current has no truly specific action; it affords a stimulus much like other stimuli, but more convenient of application, and productive of a stronger mental impression. It would be unreasonable, therefore, to confuse these mental and cutaneous effects with the more subtle nutritive changes set up by the current when used over prolonged periods.

Among the cases of functional disease cured by these means were, oddly enough, two of spasm of each little finger, one of which had lasted three months. In several instances one or the other arm was completely paralysed, the maximum duration of the ailment being two years. This last patient was a ruddy-cheeked country girl with no other evidence of neurosis. According to her own account she had suddenly lost power in the right arm after a fit. The limb was cold, blue, absolutely motionless, and anæsthetic. The anæsthesia embraced every form of sensation, including that of sense of position. The defect extended up to and included the shoulder. With the application of a very powerful coil-current (six Leclanché cells) sensation and power began to return simultaneously. Improvement was very gradual, and it was two months before recovery was complete. There were, of course, no changes in the electrical reactions except some slight general diminution of irritability.

In conclusion, I have to thank the clinical assistants (Messrs. Blacker, Dixon, and Brackenridge) for the past twelve months for their assistance in keeping the records from which these notes are derived.

# St. Thomas's Hospital MEDICAL SCHOOL.



## CALENDAR AND PROSPECTUS

FOR THE  
YEAR COMMENCING OCTOBER 1ST, 1896.



### 1896 & 1897.

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# THE ST. THOMAS'S HOSPITAL AMALGAMATED CLUBS.

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The several Students' Clubs were amalgamated in July, 1888, and are maintained by the subscriptions of the Members, and by a yearly grant from the Medical and Surgical Officers and Lecturers.

The Amalgamated Clubs comprise the Students' Club, the Medical and Physical Society, the St. Thomas's Hospital Gazette, and the following Clubs :—Athletic, Chess, Cricket, Cross Country, Football (Rugby and Association), Lawn Tennis, Rifle, Rowing, and Swimming.

All Students are strongly advised to join the Amalgamated Clubs when they enter the Medical School.

The Annual Subscription to the Amalgamated Clubs is Two Guineas. After the payment of five consecutive subscriptions the Student becomes a Life Member.

Life Membership may be compounded for in the first year by payment of Seven Guineas; in other years, by payment of Six Guineas.

New Club premises adjoining the Medical School were opened in June, 1894. They contain a Dining Room (51 ft. × 39 ft.) and a Smoking and Reading Room (distinct from the School Library), 51 ft. × 29 ft., supplied with Daily and Illustrated Weekly Papers, and a Gymnasium. A Cloak Room with Lockers, and a Lavatory with Bath Rooms, are in the old building.

Subscriptions or Composition Fees may be paid to the Medical Secretary, Mr. G. RENDLE, or the Librarian, Mr. G. S. SAUNDERS.

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## MEDICAL SCHOOL.

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A Register of LODGINGS suitable for Students has been recently revised, and is kept in the Secretary's Office. Information as to terms, accommodation, &c., can be obtained on application. This Register has been especially prepared with a view to the convenience of new Students for whose accommodation in lodgings or otherwise no definite arrangements have been made.

Medical Practitioners, Clergymen, and Private Families residing in the neighbourhood receive Students for residence and supervision.

For information on all matters relating to the Medical School, Prizes, Scholarships, &c., application should be made to the Medical Secretary, Mr. G. RENDLE, at the Hospital, Albert Embankment, S.E., personally (10 to 4, Saturday, 10 to 1) or by letter.

# St. Thomas's Hospital

## MEDICAL SCHOOL.

The WINTER SESSION 1896-97 will commence on October 2nd, and terminate on March 31st.

The SUMMER SESSION will begin on May 1st, and terminate on July 31st.

The Prizes will be distributed by the Rt. Hon. Lord Justice Lindley, in the Governors' Hall, on FRIDAY, October 2nd, at 3 P.M. During the afternoon the various Departments of the Hospital and School will be open for the inspection of Visitors.

Refreshments will be provided in the Library.

The Annual Dinner, in which all former and present Students are invited to join, will take place the same evening at the Whitehall Rooms, Hotel Métropole, at 6 for 6.30 o'clock, Dr. Wyman in the Chair.

THE first Hospital of St. Thomas, within the precinct of the Priory of St. Mary Overie, being destroyed by fire in the year 1207, the prior and convent erected in the same year near the site of their house a temporary hospital. This building was in the emergency used for religious purposes; mass was said there until the priory was rebuilt. In 1228 Peter de Rupibus, Bishop of Winchester, built the Hospital of St. Mary or St. Thomas, Overie, on the opposite or eastern side of the highway, on land provided by Amicius, Archdeacon of Surrey, and dedicated it to St. Thomas the Martyr.

The following is a translation of the "charter" of 1228:—

"The Lord Peter's charter of indulgence for twenty days granted by him for this hospital.

"Peter, by the grace of God Bishop of Winchester, to all the faithful in Christ in the diocese of Winchester, greeting. In Him who is the salvation of the faithful. As saith the Apostle, bodily discipline which consists in fasts, vigils, and other mortifications of the flesh, profiteth little, while piety availeth for all things, having the promise of the life which now is, and of that which is to come.

"Our Lord Jesus Christ among the works of piety enumerates, commends, and teaches us to fulfil six, as though more praiseworthy and more meritorious than the rest, saying, 'I was an hungred, and ye gave Me to eat; I was thirsty, and ye gave Me to drink; I was a stranger, and ye took Me in; I was naked, and ye clothed Me; I was sick, and ye visited Me; in prison, and ye came to Me.' To them that

perform these works of piety He shall grant His blessing and the glory of His heavenly kingdom, saying, 'Come, ye blessed of My Father, receive the kingdom which has been prepared for you from the beginning of the world.' But to them that neglect and do not perform works of compassion He threatens His curse and the penalty of eternal fire, saying, 'Go, ye cursed, into eternal fire, which has been prepared for the devil and his angels.' It is therefore to be borne in mind, my dearest sons, and more deeply laid to heart, how needful and how conducive to the salvation of our souls it is to exercise more readily those works of piety whereby blessing is promised to us, and the felicity of eternal life is gained.

"Behold at Southwark an ancient hospital, built of old, to entertain the poor, has been entirely reduced to cinders and ashes by a lamentable fire. Moreover, the place wherein the old hospital had been founded was less suitable, less appropriate for entertainment and habitation, both by reason of the straitness of the place, and by reason of the lack of water and of many other conveniences: according to the advice of us, and of wise men, it is transferred and transplanted to another more commodious site, where the air is more pure and calm, and the supply of waters more plentiful. But whereas this building of the new hospital calls for many and manifold outlays, and cannot be crowned with its due consummation without the aid of the faithful, we request, advise, and earnestly exhort you all, and with a view to the remission of your sins enjoin you, according to your abilities, from the goods bestowed on you by God, to stretch forth the hand of pity to the building of this new hospital, and out of your feelings of charity to receive the messengers of the same hospital coming to you for the needs of the poor to be therein entertained, that for these and other works of piety you shall do, you may, after the course of this life, reap the reward of eternal felicity from Him who is the Recompenser of all good deeds, and the loving and compassionate God. Now we, by the mercy of God, and trusting in the merits of the glorious Virgin Mary, and the Apostles Peter and Paul, and St. Thomas the Martyr, and St. Swithin, to all the believers in Christ, who shall look with the eye of piety on the gifts of their alms—that is to say, having confessed, contrite in heart and truly penitent, we remit to such twenty days of the penance enjoined on them, and grant it to them to share in the prayers and benefactions made in the church of Winchester, and other churches erected by the grace of the Lord in the diocese of Winchester. Ever in the Lord; Farewell."

The Bishop of Winchester or the Archbishop seems to have granted, in 1277, to the Brethren power to elect their own Master; in a visitation, 1323, they are ordered to follow the rule of St. Augustine—the rule of the parent house—in obedience, chastity, renunciation of individual property, and the Master to eat with the Brethren.

In 1417 the Master and Brethren formed a Court of themselves, and exercised authority within the precincts of the Hospital over persons regular or secular, and in cases civil or even criminal.

The hospital, built in 1228, had by 1507 become dilapidated and insufficient; great efforts were then made to rebuild and enlarge it.



In the Duchy of Lancaster records there is "the Rentall of Thomas Becketts hospitall in Southwarke, of all the lands and tenements belonging to the hospitall." It contains the names of the tenants and the rents paid: it is without date, but from internal evidence must be early in the sixteenth century.

Within the precincts of the hospital was the renowned printing press of James Nycolson, who, in 1527, signed the contract for the painted windows of King's College, Cambridge, as "James Nycolson, of St. Thomas's Spytell in Southwark." The most remarkable issue from this press was the first English Bible printed in England, inscribed thus—"Imprynted in Southwarke in St. Thomas Hospitale by James Nycolson. Dedicated by M. Coverdale to the King 1537."

About this time there were a Master, Brethren, and three Lay Sisters; forty beds were made up for poor, infirm, and impotent people, who were supplied with victuals and firing.

In the year 1535, Henry VIII. was excommunicated by Pope Paul III., and, declaring himself head of the church, proceeded to dissolve the Catholic houses, whose large revenues went to the Crown. There seem to have been 645 monasteries and abbeys thus treated, twenty-eight of which had abbots with seats in Parliament, ninety colleges and free chapels, and 110 hospitals of various descriptions. It is certainly in favour of the sweeping change that so able and honest a man as Sir Richard Gresham, the Lord Mayor of London, should have put his hand to the following petition to the King:

"Most redowted, puyasant, and noble Prince \* \* \* \*—here and within the cytie of London be iij hospitalls or spytells commonly called Seynt Georges Spytell, Seynt Barthilmews Spytell, and Seynt Thomas Spytell, and the new Abbey of Tower Hill, founded of good devotion by auncient fathers, and endowed with great possessions and rents only for the reliefe, comfote, and helping of the poore and impotent people lying in every street, offending every clene person passing by the way with theyre fylthy and nasty savors. Wherefore may it please your merciful goodness, enclyned to pytie and compassion, for the reliefe of Xts very images, created to his own similitude, to order by your high authoritie, as supreme head of this Church of England, or otherwise by your sage discretion, that your mayer of your cytie of London, and his brethren the aldermen for the time being, shall and may from henceforth have the order, disposition, rule and governaunce both of all the lands, tenements, and revenues apperteynyng and belongyn to the said hospitals, governors of them, and of the ministers which be or shall be withyn any of them, and then your grace shall facilie perceyve that where now a small number of Chanons, Priests, and Monkes be founde for their own profit only, and not for the common utilitie of the realme, a great number of poore, needy, syke and indugent persones shall be refreshed, maynteyned, and comforted: and also healed and cured of their infermities frankly and freely by physicions, surgeons and potycaries, which shall have stipende and salarie only for that purpose; so that all impotent persones not able to labour shall be releved, and all sturdy beggars not willing to labour shall be punished."

St. Thomas's Hospital being claimed by the King as Church property, was surrendered to him by Thomas Thirleby, the then master, on the 15th July, 1538. It was called St. Thomas à Becket's Spittil. Its yearly revenue was estimated at £266 17s. 6d., and an annual pension of 5s. 8d. was payable by the master, and another of 2s. 1d. by the curate, to the Archdeacon of Surrey. Soon after the seizure, we find that the citizens of London purchased of the Crown some of its landed estates, producing about £160 yearly. The want of the hospital thus destroyed was felt immediately. Wounded soldiers from the army in France, and the sick poor in general were without provision or help, and Henry proposed granting to the city the Mansion house of St. Bartholomew's, the dissolved house of Grey Friars adjoining, and the unoccupied fabric of St. Thomas's Hospital. The latter was intended by Henry to receive the name of the Hospital of the Holy Trinity, and to be allotted exclusively to lame, wounded, and diseased soldiers. The monastery of Grey Friars was to be for the education and maintenance of fatherless children and those of poor parents. The intentions of Henry were overtaken by death, but not before he had conferred upon the citizens of London the Hospital of St. Bartholomew's and also that of Bethlem for lunatics.

It is from the death of Henry that the connection of St. Thomas's Hospital with the City of London appears to begin. To meet the needs of the sick and destitute who had before depended on the charity of the religious houses, a Committee or Board of Inquiry was instituted by the citizens, with the sanction of King Edward. About 2,100 souls were reported as fit recipients of relief, as fatherless children and invalids, or as "Idle rogues of both sexes who were levying contributions on public sympathy by feigned tales of sorrow." It was proposed to establish receptacles for each class in the unoccupied monastic buildings, and a pecuniary contribution was set on foot to complete the work. They bought the dissolved house of the Franciscans or Grey Friars near St. Bartholomew's Hospital, and also by charter from the King received a grant as follows: "That the said mayor, commonalty, and citizens, and their successors, may have and enjoy all the franchises, immunities, and privileges whatever, which any Archbishop of Canterbury, and which the said Charles late Duke of Suffolk, or any master, brethren, or sisters of the late Hospital of St. Thomas in Southwark aforesaid; or any Abbot of the said monastery of St. Saviour, Saint Mary Bermondsey, next Southwark aforesaid, or any prior and convent of the priory of St. Mary Overie, ever had or enjoyed, or which we hold or enjoy, or our most dear father Henry the VIIIth, late King of England, or had enjoyed, or ought to have, hold, and enjoy the same: and that none of our heirs or successors may intermeddle with this our grant."

The Grey Friars became Christ's Hospital, and the Southwark site the Hospital of the Holy Trinity or St. Thomas's. The Lord Mayor and certain citizens then met on the 6th of October, 1552, and constituted themselves by royal permission governors of the hospitals, and almoners of the money collected. The Hospital of the Holy

Trinity they named in compliment to Edward, the "King's Hospital," and ordained it to receive 260 "wounded soldiers, blind, maimed, sick, and helpless objects."

They also directed that 380 children should be received into Christ's Hospital.

To complete the scheme, the old palace of Bridewell, in Blackfriars, where the Emperor Charles V. had lodged in 1522, when on a visit to Henry VIII., and where subsequently Wolsey had lived, was granted to the City by Edward as a house of correction for dissolute persons and idle apprentices, and for the temporary maintenance of distressed vagrants.

Lastly, the lands lately belonging to the Palace of the Savoy were conferred jointly on the three foundations; and a month only before the end of Edward's short reign, he incorporated by a second charter bearing date the 6th of June, 1553, the Lord Mayor and commonalty of the City of London in succession as perpetual governors of Saint Bartholomew's, Christ's, Bridewell, and the King's Hospital (which last received the name of ST. THOMAS THE APOSTLE), and secured to them the possession of all the estates and revenues appertaining to them by previous deeds of gift. So were the royal hospitals founded.

In 1557 the laws were framed and printed under the name of "The Order of the Hospitalls of K. Henry the VIII. and K. Edward the VI., viz., St. Bartholomew's, Christ's, Bridewell, St. Thomas's. By the Maior, Cominaltie, and Citizens of London," &c.

Successive bequests and donations continued to augment the property of the charities, but during the reigns of Elizabeth, James I., Charles I., and the Protectorate, there appear few facts to note. In the abstract of the charter of confirmation granted to the City in 1663 by Charles II. on his restoration, we find the charter of Edward acknowledged and confirmed. The Great Fire of London in 1666 injured St. Thomas's in its revenues only; and a fire in Southwark anno 1676 ceased, "as if by divine interposition," at the hospital, probably a strong and isolated block of building. Shortly after this, however, it was found necessary to rebuild the fabric, and in 1693 subscriptions were opened for this purpose. A long list of benefactions in this and the succeeding year, amounting in all to £37,769 3s., is given by Golding, who especially singles out Sir Robert Clayton for eulogium. The statue then erected to him, and still extant, was originally dated 1701, but this was altered on his death to 1714. He was the founder of the old square in which it stood, replacing what Golding terms "a low swampy structure of the monastic order." In 1707, Mr. Guy, founder of the neighbouring hospital, erected three wards at his own charge. In 1717, the back block of buildings adjoining Guy's Hospital was added. With the exception of the two large blocks forming the Borough frontage, the north wing erected in 1833, and the south wing in 1839, the fabric seems to have remained unchanged until its purchase by the railway. In the centre of the front quadrangle stood the brass statue of King Edward, by Scheemakers, erected first in 1737, in pursuance of the will of Charles



Joye, some time treasurer of the hospital. It now stands in the grounds of the New Hospital.

It is a matter of more difficulty to trace the early history of the medical school in connection with the hospital. For the facts which follow we are indebted to the late R. G. Whitfield, Esq., who, from the long period during which his family had been associated with this foundation, was perhaps more qualified to speak than any other person.

The earliest mention in the hospital books of an apprentice is on December 31st, 1561. It is not until 1702 that a law is met with precluding pupils or surgeons from dissecting the dead body without permission from the treasurer.

In 1703 the grand committee resolved that no surgeon should have more than three "Cubbs," a term altered in 1758 to that of "Dressers." Besides these there were also apprentices to the surgeons of the hospital, and ordinary pupils. The first mention of lectures occurs soon after the appointment of Wm. Cheselden, in 1718. These he at first gave at his own house, but afterwards by permission in the hospital. They were on anatomy and surgery. In 1723 a regular registry was ordered to be kept by the apothecary, of pupils entering to surgical practice. In 1725, Guy's Hospital was opened for the reception of patients. In 1751 the assistant-physician was allowed to take two pupils for his own benefit. In 1768 an additional surgeon, Mr. Joseph Else, was elected to read lectures to the pupils.

The students of Guy's Hospital had by courtesy been allowed to attend the operations, and a similar favour admitted the St. Thomas's men to those at Guy's. But on the 8th November, 1768, it was formally resolved that the pupils of each hospital have the liberty of attending not only the operations, but surgical practice, and the money to be divided between the six surgeons and two apothecaries. Hence the appellation of the "United Hospital"; an amalgamation never extended beyond the surgical practice.

To Mr. Else is due the foundation of a regular anatomical school. Mr. Cline, who in 1781 was appointed to read lectures conjointly with Mr. Else, was mainly instrumental in bringing it to its greatest celebrity. At Mr. Else's death, Mr. Cline purchased the collection of preparations made by him and Mr. Girle, a former surgeon, which are now in the hospital museum, and became sole lecturer on anatomy. In 1788 he also became surgeon to the hospital. Mr., afterwards Sir Astley, Cooper was apprenticed to Mr. Cline in 1784, and before his election, as one of the surgeons to Guy's Hospital in 1800, was joint lecturer with his teacher on anatomy and surgery. They both added materially to the pathological museum.

In 1812 Mr. Henry Cline was elected surgeon to St Thomas's Hospital on his father's resignation, and carried on the anatomical lectures conjointly with Astley Cooper. In 1813 a new anatomical theatre and museum were built, the hospital giving £3000 for the purpose, and the two lecturers £1000 each. In 1815 Mr. Benj. Travers, an apprentice of Astley Cooper's at Guy's, was elected surgeon, according to the established rule which gave the vacancy



to the senior apprentice of either institution. Mr. Travers joined in the lectures, devoting his attention specially to ophthalmic surgery. In 1820 Mr. Joseph Henry Green was elected surgeon, on the death of his cousin Mr. Hy. Cline, having been apprenticed to his uncle Mr. Cline in the year 1809. From 1820 to 1825 he lectured with Astley Cooper. At this period all the branches of medical study,—viz., medicine, chemistry, *materia medica*, midwifery, botany and physiology—were lectured on at Guy's Hospital, and no physician of St. Thomas's was allowed to share them.

In 1824 Sir A. Cooper resigned the surgical chair, and Mr. C. Aston Key, his apprentice and nephew by marriage, joined Mr. Green in the office. Mr. Frederick Tyrrell, standing in exactly the same relation to Cooper, received permission to lecture on diseases of the eye. In the following year Cooper showed signs of cerebral disturbance, and the family desired that his nephew, Mr. Bransby Cooper, should be his successor. But the claims of Mr. John Flint South were considered superior, and he was appointed. From this cause the "United Hospitals" were severed, and a complete school set up in both. The majority of the students clung to Guy's, where the prestige of the great Sir Astley was still strong; and St. Thomas's school began to sink. The establishment of the Aldersgate Street private school under Tyrrell and Lawrence materially aided in this declension, as did also the secession of Dr. Elliotson to the newly-established University College, and the foundation of a fresh school at King's College, where for a time the surgical lectures were given by Mr. Joseph Henry Green, although a surgeon of St. Thomas's.

Owing to the unprosperous state of affairs in 1842, the Governors came forward to reorganize the school, and the aid of Mr. R. D. Grainger, whose popularity had been established in the Webb Street private school, was obtained. Mr. Joseph H. Green also rejoined the school; and Dr. Marshall Hall, Dr. Hodgkin, Dr. Martin Barry, Dr. Gregory, and Mr. Benjamin Travers contributed to its efficiency. In 1847 the Governors added to the School a lectureship on general pathology in connection with the hospital practice, and appointed to that lectureship and the associated clinical duties Mr. John Simon, whom afterwards (1853) they made one of the surgeons. In 1855 they added a lectureship on public health, and appointed to it Dr. Headlam Greenhow, who afterwards became physician to the Middlesex Hospital. This state of affairs continued until 1858, when the Governors gave back the management, and its attendant risks, into the hands of the lecturers.

For some years it was maintained with difficulty, and much self-sacrifice on the part of the staff, during what may be termed a transitional period, in the hope, now realized, of its once more developing into an institution worthy of its old traditionary glories.

From its foundation down to the year 1862, the hospital occupied the original site near London Bridge, but in that year the property was sold for the extension of the railway accommodation, and the establishment temporarily removed to the Surrey Gardens, where

it was carried on till the summer of 1871. In 1868 the first stone of the New Hospital at Westminster Bridge was laid by the Queen, and the completed building was opened by her Majesty in 1871. In September the patients were first admitted into the New Hospital, and the Medical School was opened on October the 2nd.

## NIGHTINGALE NURSING SCHOOL.

The Committee of the "NIGHTINGALE FUND" have arrangements with the authorities of St. Thomas's for educating Women in the practice of Hospital Nursing. On the satisfactory completion of one year's training, they will be required to enter into service as Nurses in St. Thomas's or some other Hospital or Infirmary. A limited number of gentlewomen can be admitted under special agreements to this course of training, with a view to qualify themselves for superior appointments, or as District Nurses.

The Regulations as to the admission of Candidates may be obtained by writing to Miss L. M. Gordon, the Matron, St. Thomas's Hospital, London, S.E., to whom also application should be made by Institutions requiring trained Superintendents or Nurses.

Candidates should, whenever it is possible, make personal application to Miss Gordon, at the Matron's Office, at 10.30 a.m., on Tuesday or Friday.

The Nightingale Fund is the proceed of a public subscription raised at the close of the Crimean War, as a tribute to Florence Nightingale, for the services rendered by her in tending the sick and wounded soldiers in the Military Hospitals on the Bosphorus and at Balaklava. It was, by her request, vested in Trustees to enable her to establish an Institution for the training, sustenance, and protection of Nurses and Hospital attendants, and, as invested, produces an income of £1400. The management is in a Council, appointed by her. The School was opened at old St. Thomas's in 1860 with 12 probationers, increased to 39 in the present Hospital. 1263 candidates have been admitted and 746 trained Nurses have received appointments. A large number are now Matrons or Superintendents of Nurses.

The Secretary to the Council is Mr. Henry Bonham-Carter, 5 Hyde Park Square, W.

## THE HOSPITAL.

The original Hospital latterly contained 500 beds. The present building contains in all 572 beds. It consists of six blocks appropriated to the reception of patients; with one for the administrative and other offices, and one for the Medical School. The Ward blocks, though connected by corridors, stand apart, so as to afford free exposure in all directions. The Wards, with the exception of four which are placed on the ground floor, occupy the first, second, and third floors. Generally, each Ward affords accommodation for 28 beds, which are placed against the piers between the windows, so as to secure thorough ventilation. In a small Ward annexed to each larger Ward, there are two beds for cases requiring special care or treatment.

The operating theatres are unusually large, and have been lately thoroughly refitted, refloored, and provided with electric lighting. They are now peculiarly well adapted for the carrying out of aseptic surgery.

Of the whole accommodation of the Hospital, about 210 beds are appropriated to Medical cases, and 270 to Surgical cases. There are special Wards for the reception of diseases peculiar to women (21 beds); for diseases of the eye (25 beds); and for children under six years of age (30 beds). In one of the blocks, separated from the rest of the establishment, there are Wards for infectious diseases.

The space provided for each bed in the ordinary Wards is upwards of 1,800 cubic feet, and in the block appropriated to infectious diseases, about 2,500 cubic feet.

The Department for Out-patients is extensive and well arranged, and every facility is afforded for the treatment of different forms of Medical and Surgical casualties and diseases.

During the twelve months ending December 31st, 1895, the number of patients admitted into the Hospital amounted to 5,788. In the same period, 21,873 Out-patients have been treated, and in the Maternity department 2,218 women have been attended at their own homes. Casualties, to the number of 92,675 attendances, were treated during the same period.

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## THE MEDICAL SCHOOL.

The School buildings, isolated by a large quadrangle from the Hospital, stand at its southern extremity, between the river and the gardens of Lambeth Palace. They are very commodious, and every effort has been made to provide accommodation completely fulfilling modern requirements.

In the year 1885 the Anatomical Department was much enlarged and remodelled. In 1892 considerable alterations were carried out in the Physiological Department, giving increased space in the Laboratory and providing facilities for lectures and lantern demonstrations. In 1893-4 further extensive alterations were made. Two new wings were added to the main building, containing a large laboratory for the classes in Elementary Biology and Pathology, private working rooms for the teachers in those departments, a dissecting room for the Biology class, improved accommodation for the Operative Surgery class, and a large class room for the classes in Practical Surgery. At the same time the collection of Physical Apparatus was removed to a laboratory *en suite* with the Chemical Department.

New premises were also provided for the Students' Club, to which a Gymnasium has been added, and the arrangements are now such as to render it quite unnecessary for Students to leave the School buildings during the working hours of the day. Electric Lighting has been introduced into the new departments and part of the older building.

The plan inserted between pages 14 and 15 shows the changes in detail, both on the ground and first floors.



## THE MUSEUM OF HUMAN AND COMPARATIVE ANATOMY AND PATHOLOGY.

*Curator.*—S. G. SHATTOCK, ESQ., F.R.C.S.

The Museum, which is of ample size and well lighted, has two galleries devoted entirely to the display of specimens illustrating Pathology: the different series are each preceded by a normal preparation of the organ to which they refer.

On the ground floor are the collections of Normal Human, and of Comparative Anatomy; there is, moreover, a series of type specimens of Pathology, selected to facilitate the study of this subject.

THE COLLECTION OF HUMAN ANATOMY contains a large number of dissected Preparations, illustrating the Organs of Locomotion and Sense; the Nervous System; the Digestive, Respiratory, and Urinary Apparatus; the Vascular System and Organs of Reproduction; and, in addition, a series of elaborate dissections. A new Catalogue of this collection has been drawn up by Mr. Shattock.

THE PATHOLOGICAL COLLECTION contains above 3,000 specimens, arranged in series as follows:—Injuries and Diseases of the Organs of Motion; of the Organs of Digestion, of Circulation, of Respiration, of the Nervous System, of the Genito-Urinary System, and Malformations. The descriptive Catalogue of this collection has been entirely re-written by Mr. Shattock: the previous edition was edited by Mr. Sydney Jones.

Among the earliest contributors to the Museum were Mr. Cline, Sir A. Cooper, Mr. Travers, and Mr. Tyrrell; and many of the specimens are of great historical interest: those used by Sir A. Cooper to illustrate his works on Dislocations and Fractures, on Hernia, and on the Testis, are contained amongst them, as well as two preparations showing the result of Ligature of the Abdominal Aorta, one a case of Sir A. Cooper's, another that of Mr. J. F. South's. In the collection, too, are Mr. Travers's preparations illustrating the process of nature in repairing Injuries of the Intestines, and those furnished by his experiments on the ligature of Arteries.

The section of Fractures has been enriched by Sir William MacCormac, who presented numerous specimens of gun-shot injuries, etc., obtained from cases under his care during the Franco-German War (1870); that of Diseases of the Liver, by a large number of Biliary Calculi presented by Dr. Ord; and that of Diseases of the Larynx, by specimens presented by Dr. Semon.

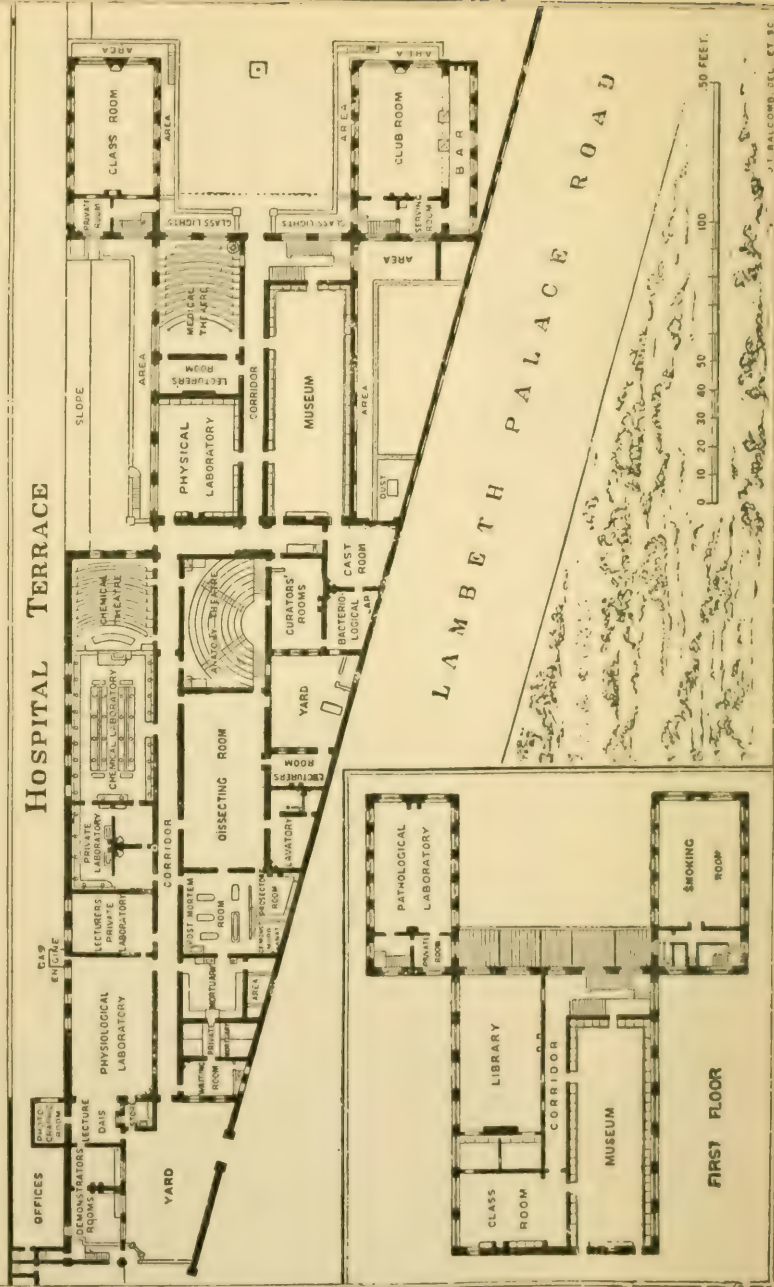
THE COLLECTION OF COMPARATIVE ANATOMY comprises about 400 dissected Preparations, and in addition an equal number of most carefully prepared osteological specimens. A large number of these dissections were made by Sir A. Cooper, to illustrate his Lectures, when Professor of Comparative Anatomy to the Royal College of Surgeons. A new Catalogue of this collection has been drawn up by Mr. F. G. Parsons.

THE CABINETS OF MICROSCOPICAL ANATOMY, which are under the charge of the Demonstrator of Practical Physiology, are available for use by Students who wish to examine them, subject to such regulations as may be deemed necessary.





# RIVER PHAMMES



GROUND PLAN.

J. L. BALCOMB, DEL. ET SC.

THE MATERIA MEDICA MUSEUM contains in cases a complete collection of all the chemicals and organic substances included in the British Pharmacopœia ; all these are named and numbered. A second collection of all the chief medicinal substances is placed in drawers and is freely accessible to students. A large and very fine collection of dried medicinal plants, named according to the latest nomenclature, is displayed on the walls of the Museum.

The Museum is under the conjoint superintendence of the Lecturer on Pharmacy and Pharmacology and Mr. Shattock.

THE COLLECTION OF CHEMISTRY AND MINERALOGY is under the superintendence of Mr. Dunstan. The majority of the specimens were presented by the late Dr. Bernays.

The Museums are open to Students daily from 9 a.m. till 5 p.m., and every encouragement is given to Students to make use of the well-arranged educational series for the purposes of their studies.

## THE LIBRARY.

*Librarian* :—G. S. SAUNDERS, ESQ.

The Library, to which Students have access with the permission of the Librarian, and which can be used by them as a Reading Room, has been recently completely re-arranged and re-catalogued, and electric lighting has been introduced. It contains a valuable collection of standard works ; various periodicals are regularly taken in, and a number of modern text books are added from time to time for reference.

## LABORATORIES, THEATRES AND CLASS ROOMS.

The Chemical, Physiological, and Anatomical Departments are complete in themselves. They consist of large Laboratories for Classes, Private Laboratories, and each is provided with its own Lecture Room. A separate Laboratory for the practical teaching of Physics contains the Physical Apparatus.

The Pathological Department beyond the Museum and Post Mortem rooms is provided with a large Laboratory for the Class in Pathological Histology, and a Bacteriological Laboratory under the charge of Mr. Shattock.

The Elementary Biology lectures and demonstrations are given in the large new Laboratory, and the Biological Dissecting Room and Lecturers Private Room are contained in the same building.

A special Theatre is devoted to the use of the Lecturers giving the more advanced systematic courses, such as Medicine, Surgery, &c., and two large class rooms are available for the Tutorial Classes held in connection with these courses. Special accommodation has also been provided for the Classes in Operative Surgery.

The new buildings were opened by H.R.H. the Duke of Connaught, K.G., President of the Hospital on June 9th, 1894.

# MEDICAL AND SURGICAL OFFICERS.

Consulting Physician.  
JOHN HARLEY, M.D. Lond.

Consulting Surgeons.  
Sir JOHN SIMON, K.C.B., Hon. M.D.  
Dub., F.R.S., D.C.L.  
SYDNEY JONES, M.B. Lond.  
JOHN CROFT.  
Sir WILLIAM MACCORMAC, M.A., D.Sc.,  
M. Ch. Hon. Causã, Pres. R.C.S. Eng.

Consulting Obstetric Physician.  
H. GERVIS, M.D. Lond.

Consulting Ophthalmic Surgeons.  
R. LIEBREICH.  
E. NETTLESHIP.

Physicians.  
W. M. ORD, M.D. Lond.  
J. F. PAYNE, M.D. Oxon.  
S. J. SHARKEY, M.A., M.D. Oxon.  
T. D. ACLAND, M.A., M.D. Oxon.

Assistant Physicians.  
H. P. HAWKINS, M.A., M.D. Oxon.  
H. W. G. MACKENZIE, M.A., M.D.  
Cantab.  
H. G. TURNEY, M.A., M.B. Oxon.

Obstetric Department.  
*Physician.*—C. J. CULLINGWORTH, M.D.  
*Assistant Physician.*—W. W. H. TATE,  
M.D. Lond.

Throat Department.  
*Physician.*—F. SEMON, M.D. Berlin.

Vaccination Department.  
*Physician.*—R. CORY, M.A., M.D. Cantab.

Electrical Department.  
*Physician.*—H. G. TURNEY, M.A., M.B.  
Oxon.

Resident Assistant Physician.  
S. G. TOLLER, M.D. Lond.

Surgeons.  
A. O. MACKELLAR, M.Ch.  
H. H. CLUTTON, M.A. Cantab.  
WILLIAM ANDERSON.  
B. PITTS, M.A., M.C. Cantab.

Assistant Surgeons.  
G. H. MAKINS.  
W. H. BATTLE.  
C. A. BALLANCE, M.S. Lond.  
H. B. ROBINSON, M.S. Lond.

Eye Department.  
*Surgeon.*—J. B. LAWFORD.  
*Assistant Surgeon.*—J. H. FISHER, B.S.  
Lond.

Skin Department.  
*Surgeon.*—WILLIAM ANDERSON.

Ear Department.  
*Surgeon.*—C. A. BALLANCE, M.S. Lond.

Dental Department.  
*Surgeon.*—C. E. TRUMAN, M.A. Cantab.

Resident Assistant Surgeon.  
F. C. ABBOTT, M.S. Lond., F.R.C.S.

Anæsthetists.  
WALTER TYRRELL, E. F. WHITE, F.R.C.S.,  
E. H. G. MORRIS, B.A., M.B. Cantab., H. LOW, M.A., M.B., B.C. Cantab.  
Demonstrators of Morbid Anatomy.  
H. P. HAWKINS, M.A., M.D. Oxon. H. W. G. MACKENZIE, M.A., M.D. Cantab.  
H. G. TURNEY, M.A., M.B. Oxon.

Consulting Chemist. Pharmaceutist.  
WYNDHAM R. DUNSTAN, M.A. Oxon., EDMUND WHITE, B.Sc. Lond.  
F.R.S.

Registrars.  
*Medical.* C. R. BOX, M.D. Lond. *Surgical.* C. S. WALLACE, B.S. Lond. *Obstetric.* W. W. H. TATE, M.D. Lond.

Lecturers.  
A. W. BENNETT, M.A., B.Sc. Lond. H. RAYNER, M.D.  
T. GREGOR BRODIE, M.D. Lond. EDWARD SEATON, M.D.  
WYNDHAM R. DUNSTAN, M.A., F.R.S. S. G. SHATTOCK, F.R.C.S.  
F. G. PARSONS, F.R.C.S.

Curator of the Museum.  
S. G. SHATTOCK, F.R.C.S.  
Dean of the School.  
H. P. HAWKINS, M.A., M.D. Oxon.

Librarian.  
G. S. SAUNDERS.  
Secretary to the School.  
GEORGE RENDLE, M.R.C.S.



## LECTURERS AND DEMONSTRATORS.

## LECTURERS.

<i>Elementary Biology</i> ... ..	Mr. PARSONS.
<i>Chemistry, Chemical Physics, and Practical Chemistry</i> ... ..	Mr. DUNSTAN.
<i>Descriptive Anatomy</i> ... ..	Mr. ANDERSON and Mr. MAKINS.
<i>General Anatomy and Physiology</i> ...	Dr. BRODIE.
<i>Practical Physiology and Histology</i> ...	Dr. CULLINGWORTH.
<i>Midwifery, and Diseases of Women</i> ...	Mr. MACKELLAR & Mr. BALLANCE.
<i>Practical and Manipulative Surgery</i> ...	Dr. PAYNE and Dr. SHARKEY.
<i>Medicine</i> ... ..	Mr. CLUTTON and Mr. PITTS.
<i>Surgery</i> ... ..	Dr. HAWKINS and Mr. SHATTOCK.
<i>Pathology and Bacteriology</i> ... ..	Dr. CORY and Mr. MACKELLAR.
<i>Forensic Medicine and Toxicology</i> ...	Dr. MACKENZIE.
<i>Pharmacology and Therapeutics</i> ...	Mr. LAWFORD.
<i>Diseases of the Eye</i> ... ..	Dr. RAYNER.
<i>Mental Diseases</i> ... ..	Dr. SEATON.
<i>Public Health and Sanitary Science</i> ...	Sir WILLIAM MACCORMAC (EMERITUS LECTURER).
<i>Clinical Surgery</i> ... ..	The PHYSICIANS.
<i>Clinical Medicine</i> ... ..	Dr. CULLINGWORTH.
"    " <i>Obstetric</i> ... ..	The SURGEONS.
" <i>Surgery</i> ... ..	Mr. LAWFORD.
"    " <i>Ophthalmic</i> ... ..	Mr. DUNSTAN.
<i>Physics</i> .. ..	Mr. BENNETT.
<i>Botany</i> ... ..	Mr. PARSONS.
<i>Comparative Anatomy and Zoology</i> ...	

## TEACHERS AND DEMONSTRATORS.

<i>Chemistry</i> ... ..	Dr. CROSSLEY and Mr. LE SUEUR.
<i>Physics</i> ... ..	Mr. LE SUEUR.
<i>Practical Pharmacy</i> ... ..	Mr. EDMUND WHITE.
<i>Practical Anatomy</i> ... ..	The LECTURERS, with Mr. PARSONS, Mr. ROBINSON, Mr. STABB, and Mr. FISHER.
<i>Physiology and Practical Physiology</i> ...	Dr. BRODIE, with Mr. RICHARDSON and Mr. RUSSELL.
<i>Practical Medicine</i> ... ..	Dr. MACKENZIE and Dr. TURNEY, with Dr. BOX.
<i>Practical and Manipulative Surgery</i> ...	The LECTURERS, with Mr. STABB.
<i>Practical Obstetrics</i> ... ..	Dr. TATE.
<i>Electro-Therapeutics</i> ... ..	Dr. TURNEY.
<i>Morbid Anatomy</i> ... ..	Dr. HAWKINS, Dr. MACKENZIE, and Dr. TURNEY.
<i>Morbid Histology and Bacteriology</i> ...	Dr. JENNER.
<i>Diseases of the Eye</i> ... ..	Mr. FISHER.
"    " <i>Throat</i> ... ..	Dr. SEMON.
"    " <i>Skin</i> ... ..	Mr. ANDERSON
"    " <i>Ear</i> ... ..	Mr. BALLANCE.
"    " <i>Teeth</i> ... ..	Mr. TRUMAN.
<i>Vaccination</i> ... ..	Dr. CORY.

## SUGGESTIONS TO STUDENTS ABOUT TO ENTER THE MEDICAL PROFESSION.

Registration.\*

The commencement of Medical Study cannot be registered at the Office of the General Medical Council until the Student has passed a Preliminary Examination in the subjects of General Education as specified in the following list :

(1) English Language ; (2) Latin ; (3) Arithmetic, Algebra, and Euclid -- Books I., II., III. ; (4) Either Greek, Logic or any Modern Language.

Preliminary Examinations.

A student who has not passed such an examination is recommended to pass either the Matriculation of the University of London, or the Professional Preliminary Examination of the College of Preceptors. The regulations respecting these may be obtained from the Registrar, University of London, Burlington Gardens, W., and the Secretary, College of Preceptors, Bloomsbury Square, W.C.

Certificates of Graduation, Matriculation, and the Local Examinations of British and Colonial Universities are accepted by the General Medical Council provided that the above-mentioned subjects be shown to have been included.

London University

Students who propose to obtain Medical Degrees in the University of London must pass both the Matriculation and the Preliminary Scientific Examinations before commencing their regular Medical Studies.

For the Preliminary Scientific Examination and the Intermediate Examination in Medicine special classes are held during the Winter and Summer Sessions (see p. 38).

**For a Student who enters in October**, intending to obtain the double qualification of the "Conjoint Board" (L.R.C.P. Lond. and M.R.C.S. Eng.), the following course of study is recommended. (For days and hours of Lectures, &c., see Time Table, p. 28.)

All Students are required to apply to the Medical Secretary for cards of Admission to the Lectures, &c., of each Session.

### First Winter Session.

Lectures, &c.

Anatomy, Elementary Biology, Elementary Physiology, Chemistry, Practical Chemistry, and Physics. Anatomical and Physiological Demonstrations. Dissections.

Examinations.

"Sessional" at Medical School in December and in March. Part III. (Elementary Biology) of First Examination of the "Conjoint Board," in March.

### First Summer Session.

Lectures, &c.

Chemistry, Practical Chemistry, and Histology, Demonstrations in Practical Pharmacy ; Practical Instruction in Pharmacy may be obtained from the Hospital Pharmaceutist. (Fee, three guineas for three months, p. 37.)

Examinations.

"Sessional," and Parts I. Chemistry and Physics and II. (Practical Pharmacy)† of the "First Conjoint," in July.

\* The Regulations of the General Medical Council with regard to Registration may be obtained from Messrs. Spottiswoode & Co., 54, Gracechurch Street, London, E.C.

† Part II. (Practical Pharmacy) may be deferred and taken at any time during the curriculum.

### Second Winter Session.

Anatomy and Physiology with Demonstrations and Dissections. Lectures.  
Practical and Chemical Physiology. Tutorial Classes in Anatomy and Physiology.

"Sessional" in December and in March; "Tests," and "Second Conjoint" (Anatomy and Physiology) in March. Examinations.

N.B.—The importance of passing the second examination at this stage cannot be too strongly insisted upon, as the Student then becomes free to devote his undivided attention to the practical subjects of the curriculum needed for the final examination.

### Second Summer Session

Hospital Practice, Medical and Surgical

Midwifery, Practical Surgery.

"Sessional" in July.

Lectures.  
Examinations.

The course of instruction in Practical Medicine must be attended by Candidates for Out-Patient Clinical Clerkships, and the course of Elementary Practical Obstetrics by Candidates for Obstetric Clerkships.

### Third Winter Session.

Hospital Practice, Medical and Surgical.

Medicine, Surgery, and Surgical Pathology, Practical Surgery, Practical Course of Pathological Anatomy. Lectures.

"Sessional" in December and March.

Clinical Clerkship (if not held during July, August, and September), and Dressership, in the Out-Patient Departments. Examinations.

Maternity Cases may be attended at any time after the Lectures on Midwifery and a course of Practical Obstetrics by Students who have passed the "Second Conjoint."

### Third Summer Session.

Hospital Practice, Medical and Surgical, with Clerkship or Dressership.

Pathological Anatomy, Forensic Medicine, Mental Disease, Therapeutics, and Public Health. Lectures.

"Sessional" in July.

Examinations.

### Fourth Winter Session.

Hospital Practice, Medical, Surgical, the Special Departments, and Post-mortem Examinations. Clerk or Dress in special Departments and Post-mortem Room. Instruction in Vaccination (Fee, one guinea, p. 37).

Practical Course of Pathological Anatomy (if not taken in third winter), Clinical Lectures on Medicine and Surgery; Obstetric Demonstrations; Diseases of Women; Diseases of the Eye. Lectures.

### Fourth Summer Session.

Hospital Practice, Medical and Surgical, and Special Departments. Clinical Medicine, Clinical Surgery.

Lectures.

### Fifth Year.

Hospital Practice, Medical and Surgical, and the Special Departments.

Tutorial Classes in Medicine, in Surgery, including operations upon the Dead Subject, and in Midwifery.

Attendance at a Fever Hospital and Clinical Demonstrations at a recognised Lunatic Asylum.

Advanced Students are strongly advised to avail themselves of the opportunities afforded for Clinical Study of Fevers at the Hospitals of the Metropolitan Asylums Board, and of Mental Diseases at Bethlem Hospital in their fifth year.

Candidates for part III. of the Final Examination for the Diploma in Medicine and Surgery of the "Conjoint Board" are required to produce a certificate of attendance on not less than twenty labours. Students who have passed the "Second Conjoint," and have attended Lectures on Midwifery, and a Course of Elementary Practical Obstetrics, may enter their names for the Rota of Obstetric Clerks.

Examina-  
tions.

No Student is admitted to part I. or II. of the Third Examination of the "Conjoint Board" until at least two years after passing the Second Examination, and five Winter and five Summer Sessions after Registration.

### Preliminary Summer Session.

If a Student enters in May, intending to obtain the qualification of the Conjoint Board, he is advised to pursue the following course of study:—

Lectures.

Elementary Biology, Lectures and Classes in Chemistry and Demonstrations in Practical Pharmacy.—Practical Instruction in Pharmacy may be obtained from the Hospital Pharmaceutist (Fee, three guineas for three months, p. 37).

Botany (if required for a higher examination).

Examina-  
tions.

Part II. (Practical Pharmacy) of "First Conjoint" in July or October.

NOTE.—Students who join a Medical School in May have the advantage of an additional three months to devote to the preparation for the three parts of the First Examination of the "Conjoint Board," and of passing in Elementary Biology at Christmas.

All Students are required by the Governors to conform to the Regulations of the Hospital and Medical School, and the School Committee is empowered, with the approval of the Treasurer, to suspend or remove a Student at any time for adequate reason. (See also p. 36.)

During the fourth and fifth years, the greater part of the time can, and should, be given to the practical study of disease in the Wards, Out-Patient Departments, and Post-Mortem Room, but Students are reminded that such courses of lectures as relate to Final Examinations may be with advantage re-attended.

Students intending to prepare for **University Degrees and other higher Examinations** should apply to the Medical Secretary for the Regulations relating thereto. (For Special Classes for these Examinations see p. 38.)

Students when qualified should use every effort to obtain one or more of the senior appointments open to them, especially those of House Physician, House Surgeon, and Obstetric House Physician. These and other appointments, of which details are given at p. 31, afford opportunities for obtaining practical professional knowledge which cannot be estimated too highly. No payment is required for any of them.

**N.B.—The Regulations for the Sessional Examinations and Prizes will be found on pp. 32-33.**



# HOSPITAL PRACTICE.

## CLINICAL TEACHING OF MEDICINE AND SURGERY.

CLINICAL instruction is given daily by the Physicians and Surgeons during their visits to the Wards, and by the Assistant Physicians and Assistant Surgeons in the Out-Patient Departments (Time Table, p. 22). Lectures on Clinical Medicine and Surgery are given in the afternoon every week throughout the academical year by one or more of the Physicians and Surgeons. A Special Course is also given by Sir W. MACCORMAC.

**Diseases of Women.**—Clinical instruction is given in Adelaide Ward on Tuesdays and Fridays at 2 p.m., and in the Out-Patient room on Wednesdays and Saturdays at 1.30 p.m.

**Diseases of Children.**—Instruction is given in the Out-Patient room, on Saturdays at 1.30.

**Midwifery.**—A maternity department is connected with the hospital, women being attended in confinement at their own homes by students of the hospital, under the supervision of the Assistant Obstetric Physician (p. 32). Students are, when possible, accompanied to their first three cases by one of the Obstetric House Physicians.

**Diseases of the Eye.**—Clinical teaching in the Out-Patient rooms daily except Saturday (Time Table p. 22). Clinical Lectures or Ophthalmoscopic Demonstrations weekly.

## DAYS AND HOURS FOR SURGICAL OPERATIONS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Surgical Operations.....	2.0	3.30	2.0	2.0	3.30	2.0
Gynæcological „ .....	—	—	—	2.0	—	—
Ophthalmic „ .....	—	—	—	2.0	—	—

**Diseases of the Skin.**—Clinical instruction by Mr. ANDERSON on Fridays.

**Diseases of the Throat.**—Clinical instruction by Dr. SEMON and Assistant on Tuesdays and Fridays. During the Winter Session Dr. SEMON gives a short course of Clinical Lectures to senior students.

**Diseases of the Ear.**—Clinical instruction by Mr. BALLANCE on Mondays. During the Winter Session Mr. BALLANCE gives a short course of Lectures to senior students.

**Mental Diseases.**—Clinical instruction by Dr. RAYNER on Thursdays.

**Diseases of the Teeth.**—Mr. TRUMAN and Assistant give instruction in Dental Surgery on Tuesdays and Fridays.

**Vaccination** is taught practically by Dr. CORY, who is authorised by the Local Government Board to give certificates of proficiency in Vaccination at St Thomas's Hospital. Fee, One Guinea (see p. 37).

**Electro-Therapeutics.**—Instruction is given by Dr. TURNEY on Thursdays.

**Anæsthetics.**—The mode of Administration is taught practically by Mr. TYRRELL and Mr. WHITE.

## POST-MORTEM EXAMINATIONS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Dr. HAWKINS .....	—	2.0	—	—	2.0	—
Dr. MACKENZIE.....	2.0	—	—	2.0	—	—
Dr. TURNEY .....	—	—	2.0	—	—	2.0

TIMES OF ATTENDANCE OF THE PHYSICIANS AND  
SURGEONS IN THE WARDS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
DR. ORD .....	2	—	—	2	—	—
DR. PAYNE .....	2	—	—	2	—	—
DR. SHARKEY .....	—	2	—	—	2	—
DR. ACLAND.....	—	2	—	—	2	—
DR. CULLINGWORTH .....	—	2	—	—	2	—
MR. MAC KELLAR.....	2	—	—	2	—	—
MR. CLUTTON .....	—	2	—	—	2	—
MR. ANDERSON .....	2	—	—	2	—	—
MR. PITTS .....	—	2	—	—	2	—
MR. LAWFORD .....	—	2	—	—	2	—

TIMES OF ATTENDANCE OF THE ASSISTANT-PHYSICIANS  
AND ASSISTANT-SURGEONS IN THE OUT-PATIENTS' ROOMS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
DR. HAWKINS.....	1.30	—	—	1.30	—	—
DR. MACKENZIE .....	—	—	1.30	—	—	1.30
DR. TURNEY .....	—	1.30	—	—	1.30	—
DR. TATE (Women and Children)...	—	—	1.30	—	—	1.30
MR. MAKINS .....	1.30	—	—	1.30	—	—
MR. BATTLE .....	—	1.30	—	—	1.30	—
MR. BALLANCE .....	—	—	1.30	—	—	1.30
MR. ROBINSON .....	1.30	1.30	—	—	—	—

TIMES OF ATTENDANCE IN THE OUT-PATIENT SPECIAL  
DEPARTMENTS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
MR. LAWFORD } (Diseases of {	—	1.30	—	1.30	1.30	—
MR. FISHER } the Eye) {	1.30	—	1.30	—	—	—
DR. SEMON (Diseases of Throat)...	—	1.30	—	—	1.30	—
MR. ANDERSON (Diseases of Skin).	—	—	—	—	1.30	—
MR. BALLANCE (Diseases of Ear)..	1.30	—	—	—	—	—
DR. TURNEY (Electro-Therapeutics)	—	—	—	2	—	—
MR. TRUMAN (Diseases of Teeth)..	—	10	—	—	10	—
DR. CORY (Vaccination) .....	—	—	11.30	—	—	—
DR. RAYNER (Mental Diseases) ...	—	—	—	10	—	—

# LECTURES, CLASSES, & DEMONSTRATIONS

*A complete list of Lecturers and Demonstrators, p. 17.*

*Time-table of days and hours of Lectures, &c., p. 28.*

## ELEMENTARY BIOLOGY.

MR. BENNETT, B.Sc., AND MR. PARSONS.

A six months' practical course to meet the requirements of the "Conjoint Board" is held from October to March, and a revision class from May to July.

*Special classes*, for the Preliminary Scientific, are commenced in October for the July examination of the University of London. (Fee, see p. 38.)

## BOTANY.

MR. BENNETT, B.Sc.

A course of lectures on Systematic Botany is given during the Summer Session. It comprises the general principles of the classification of plants, with demonstrations of the characters of all the more important natural orders, especially those of medicinal value. The lectures are illustrated by diagrams and fresh specimens. (Fee, see p. 37.)

*Special classes* for the London University and other examinations commence in October. (Fee, see p. 38.)

## COMPARATIVE ANATOMY.

MR. PARSONS.

A course of six lectures, especially intended for the primary examination for the Fellowship of the College of Surgeons, is given twice yearly. (Fee, see p. 37.)

## CHEMISTRY AND CHEMICAL PHYSICS.

MR. DUNSTAN, F.R.S.

LECTURES on Chemistry and Chemical Physics are given three times weekly during the Winter Session, and on Chemistry during the Summer Session. These lectures are fully illustrated by experiments.

A course of Practical Work is commenced in January and is continued during the Summer Session.

These courses include the subject-matter of the various Examining Boards, and are specially arranged to afford the student an insight into the principles of chemical science and their application in Medicine.

A course of Chemical Demonstrations is given in connection with the Lectures on Toxicology and Forensic Medicine.

*Special classes* are held for students preparing for the Preliminary Scientific and Intermediate M.B. Examinations of the University of London, and for the Examinations of other Universities. (Fee, see p. 38.)

*A special course* of Practical Instruction is given in the Laboratory to Candidates for Diplomas in Public Health. (Fee, see p. 37.)

Arrangements may be made for additional Practical Work (Elementary and Advanced) in the Chemical Laboratory at fees which may be ascertained from the Medical Secretary.

## ANATOMY.

MR. ANDERSON AND MR. MAKINS.

(a) ELEMENTARY.—A six months' course, consisting of two lectures and one oral examination weekly, is given for first-year students, dealing with osteology and attachments of muscles and ligaments.

(b) ADVANCED.—A six months' course, consisting of three lectures and one oral examination weekly, is given for second-year or more advanced students.

The lectures are illustrated by fresh dissections and preparations.

Classes, conducted partly by examination, partly by demonstration, are held during the latter half of the Winter Session, and deal with those sections of anatomy which cannot be included in the lecture course.

(c) **PRACTICAL.**—During both winter and summer sessions the dissecting room is open for the use of students, and the demonstrators attend daily. A number of stock preparations are displayed in the room, and the others are preserved for use in the tutorial classes.

Tutorial classes are held prior to the January, March and July examinations of the "Conjoint Board," which all candidates are allowed to attend. A verbal test examination is held three weeks prior to the examinations, at which candidates must satisfy the teachers as to their knowledge before obtaining the necessary signatures to their schedules.

*Special classes* in advanced anatomy are conducted by the lecturers and demonstrators for the various University and the Fellowship of the College of Surgeons examinations. (Fee, see pp. 37, 38.)

## PHYSIOLOGY.

DR. T. GREGOR BRODIE.

A systematic course of lectures is given throughout the Winter and Summer Sessions. As certain portions of the subject are dealt with more fully in some years than in others Students are required to attend the course both in the first and second years.

An elementary tutorial class for first year students is held twice a week during the first part of the Winter Session.

An elementary practical class for second year Students is held in the first half of the Winter Session. An elementary course of Chemical Physiology, also for second year Students, is given in the second half of the Winter Session.

A practical class in Histology is held three mornings a week during the Summer Session, and is attended by first year Students. Each Student is practically instructed in the methods of preparing histological specimens.

Each Student for the purposes of this class must provide himself with a microscope, slides and cover glasses, drawing-book and pencils, box to hold twelve dozen specimens, forceps, scalpel, scissors, section-lifter, mounted needles, and six watch glasses.

A table, cupboard and drawer, chemicals, staining and mounting fluids, &c., are provided for him. A deposit of 10s. is charged for the use of a key and apparatus, and this is repaid at the end of the course if they are returned in proper order.

Tutorial classes in Physiology are held by the Demonstrators prior to the January, April, and July examinations of the "Conjoint Board."

A *special class* in advanced practical Philosophy is held twice a week from October to March and consists of two parts. The first half of the course is devoted to the use and study of those instruments and experiments which are fitted to class work. The second half is a course of advanced Chemical Physiology. During this class, demonstrations are given of many experiments which cannot be carried out by the Students themselves. This class is intended for those preparing for University Examinations (Cambridge, London, Oxford), or for the Fellowship of the College of Surgeons. For attendance in this class a special fee of six guineas is charged.

## PHARMACY, PHARMACOLOGY, AND THERAPEUTICS.

DR. MACKENZIE.

Lectures are given three times a week during the Summer Session, the course being specially adapted to the requirements of candidates for the examination of the "Conjoint Board."

This course embraces the physiological actions of the various medicinal agents on the healthy body, and on general morbid conditions.



Demonstrations are given in the Materia Medica Museum by Mr. White and two assistants.

**PRACTICAL PHARMACY.** Instruction is given by the Hospital Pharmacist, Mr. E. White, B.Sc., to students requiring it. Fee, see p. 37.

*Special classes* are arranged to meet the requirements of—(a) the "Conjoint Board," (b) the intermediate M.B. of the University of London, (c) the first M.B. of Oxford and second of Cambridge.

### **MIDWIFERY AND DISEASES OF WOMEN.**

**DR. CULLINGWORTH.**

A systematic course of lectures on Midwifery is delivered during the Summer Session, embracing the physiology and pathology of pregnancy, labour, and the puerperal state, preceded by an account of the anatomy and development of the female pelvis, and of the placenta and fetal membranes.

A short course of Obstetric demonstrations on the model is given by Dr. Tate during the Winter Session.

A course of about twenty lectures on the Diseases of Women is delivered during the Winter Session. The lectures are partly systematic and partly clinical, the subjects varying from year to year.

A class is held by the Obstetric tutor for practical instruction in the mechanism and management of labour and the use of instruments. No student is allowed to attend maternity cases until he has attended this class.

Tutorial Classes are held prior to the January, April, and July Examinations of the "Conjoint Board." The Composition Fee provides for attendance on one series of these Classes only.

### **MEDICINE.**

**DR. PAYNE AND DR. SHARKEY.**

A systematic course of lectures on the Principles and Practice of Medicine is given three times weekly during the Winter Session.

Clinical lectures on Medicine are given once weekly throughout the Academic year, by the physicians to the Hospital in rotation. The subject of each is advertised beforehand in the Hospital and Medical School.

### **PRACTICAL MEDICINE.**

**DR. MACKENZIE AND DR. TURNEY.**

An elementary course of practical instruction in the means of physical diagnosis is held for about a month prior to each quarterly appointment of out-patient clinical clerks; no student can be appointed until he has attended this class, or an equivalent course elsewhere. Instruction is given in the principles and method of examination of the circulatory, respiratory, urinary, digestive, and nervous systems. Tutorial Classes are held prior to the January, April, and July Examinations of the "Conjoint Board." The Composition Fee provides for attendance on one series of these Classes only.

### **SURGERY.**

**MR. CLUTTON AND MR. PITTS.**

A systematic course of lectures on General and Special Surgery is given three times weekly throughout the Winter Session. The subject, being too extensive for a six months' course, is completed in two Winter Sessions.

Clinical lectures on Surgery are given once weekly throughout the Academic year, by the surgeons to the Hospital in rotation. The subject chosen for each lecture is advertised beforehand in the Hospital and Medical School.

### **PRACTICAL SURGERY.**

**MR. MACKELLAR AND MR. BALLANCE.**

During the Summer Session Mr. Ballance holds a class once a week, providing special instruction for students about to apply for Out-patient dresserships. It comprises bandaging, the treatment of wounds the use of

certain instruments and splints, and the demonstration of surgical landmarks on the living model. No student can be appointed a dresser until he has attended this class.

The Winter Course includes the diagnosis and treatment of fractures and dislocations, application of trusses and tourniquets, minor operations, treatment of hæmorrhage and surgical emergencies, and the completion of the Summer Course on instruments and applied anatomy.

The teachers of practical surgery are assisted by Demonstrators, who supervise the students after each lecture in the various manipulations on the living models provided.

Tutorial classes are held for six weeks prior to the January, April, and July examinations of the "Conjoint Board." These include general surgery, operative surgery, and surgical anatomy, by the teachers and Demonstrator of Practical Surgery; and surgical pathology, by Mr. Shattock. The Composition Fee provides for attendance on one series of these Classes only.

### **OPERATIVE SURGERY.**

Classes are held by Mr. MacKellar previous to the January, April, and July examinations of the "Conjoint Board." The operations are performed by the students, subjects being provided at the expense of the school.

*Special classes* are held during the Summer Session and at other convenient times by Mr. Ballance and Mr. Battle, for students preparing for the higher examinations. The number of students to each subject is limited to two. (Fee, see p. 37.)

### **PATHOLOGY, PATHOLOGICAL ANATOMY, AND BACTERIOLOGY.**

#### **DR. HAWKINS AND MR. SHATTOCK.**

A course of lectures on General Pathology, Surgical Pathology, and the diseases of special organs is given by Dr. Hawkins and Mr. Shattock throughout the Winter and Summer Sessions. Each lecture is followed by a demonstration, in which the main points are illustrated by microscopical and museum preparations. Illustrative sections for microscopical examination are given to each student for preparation and mounting.

Mr. Shattock's course of lectures deals with morbid growths, with the pathological questions touched upon in the systematic course of Surgery, and with Bacteriology.

The Demonstrator of Morbid Histology holds occasional classes, in which the microscopical preparations contained in the pathological cabinet are shown and explained.

Students are selected annually to assist the Demonstrator of Morbid Histology.

Post-mortem examinations are performed daily at 2 p.m. by Dr. Hawkins, Dr. Mackenzie, or Dr. Turney, and demonstrations given. Students are appointed to act as clerks, and are required to make examinations under the supervision of the demonstrators.

### **PRACTICAL BACTERIOLOGY.**

A short course is given during May and June by Mr. Shattock. Fee, One Guinea, including materials.

### **FORENSIC MEDICINE AND TOXICOLOGY.**

#### **DR. CORY AND MR. MACKELLAR.**

A three months' course of lectures is given during the Summer Session.

The Medical Section is taken by Dr. Cory.

The Surgical Section and Toxicology by Mr. MacKellar.

The lectures cover the synopses of the various Examining Boards, and are supplemented in the toxicological section by demonstrations by Dr. Crossley.

## MENTAL DISEASES.

DR. RAYNER.

A three months' course of lectures is given during the Summer Session, comprising Symptomatology, Causation, States and Forms of Disease.

1. Mental Defects—Idiocy, Imbecility, etc.
2. Mental disorders—(a) States of Mental Depression, Melancholia, etc.; (b) States of Mental Exaltation, Mania, etc.; (c) States of Stupor; (d) States of Chronic Disorder, and Dementia.
3. Mental disorder in relation to diseases, causes, etc.

(a) General paralysis, epilepsy, and other neuroses. (b) Insanities of puberty, adolescence, pregnancy, parturition and lactation; climacteric and senile insanities. (c) Insanities from injury, heat-stroke, fevers, etc. (d) Insanities from alcohol, lead, and other toxic agencies. (e) Insanity from gout, phthisis, and associated bodily diseases.

### 4. General Pathology.

Clinical Instruction is given by visits to Bethlem Hospital and other institutions for the Insane and Imbecile.

## DISEASES OF THE EYE.

MR. LAWFORD AND MR. FISHER.

A course of about thirty lectures on the principal disorders and diseases of the Eye and its appendages is given during the Winter Session. Patients are frequently shown, or illustrative cases described. A lecture or demonstration of cases is given weekly during the Summer Session.

An elementary class for learning the use of the Ophthalmoscope is held in October, January, and May. Ophthalmoscopic cases are shown once a week during the Winter Session.

Oral classes and demonstrations are held in connection with the Surgical tutorial classes for the examinations of the "Conjoint Board."

*A Special Course* of operations on the dead subject is given by Mr. Fisher. (Fee, see p. 37.)

## PUBLIC HEALTH.

DR. SEATON.

A course of lectures is given during the Summer Session, including:—

Water, Air, Soil, Food, the Dwelling—in relation to Health and Disease—Infectious and Epidemic Diseases, the principles of preventive measures—Quarantine Isolation—Hospitals, temporary or permanent—Provisions of the Act for Notification of Diseases—The principles of Disinfection and the mode of action of the chief disinfecting agents—Vaccination—Statistics in relation to public health—Statutes relating to public health—The powers and duties of Sanitary Authorities and their officers—Construction and Ventilation of Sewers, methods of sewage disposal and purification—Trades regulated under the Public Health Acts.

The lectures are supplemented by Public Health demonstrations, relating to water supply, systems of sewage disposal and purification, establishment and arrangement of Isolation Hospitals, house drainage, &c.

*Special Classes.*—A six months' course of laboratory instruction for the various diplomas in public health is given by Dr. Seaton, Mr. Shattock, and Mr. Dunstan. (Fee, see p. 37.)

A shorter course of one or two months for students who do not need the above is also given. (Fee, see p. 37.)



# DAYS AND HOURS OF LECTURES AND DEMONSTRATIONS. WINTER SESSION.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Years of Attendance
Elementary Biology, p. 23 .....	—	12	—	12	—	—	1st Year.
Physics, Chemistry & Practical Chemistry, p. 23 .....	—	—	12	—	12	10.30	do
Descriptive and Surgical Anatomy, p. 23 {	—	9.30	—	9.30	—	9.30	do.
Anatomical Demonstrations, p. 24 .....	9.30	—	9.30	—	9.30	11	2nd Year.
Physiology, p. 24 .....	10½-4½	10½-4½	10½-4½	10½-4½	10½-4½	10½-1	1st & 2nd.
Physiological De- } Oct., Nov., Dec., monstrations, p. 24 } Oct. to Mar.	10.45	—	10.45	10.45	—	—	do.
Practical Surgery, p. 26, Oct., Nov., Dec.	—	—	9.30	—	9.30	—	1st Year.
Comparative Anatomy (six lectures), p. 23	—	10.45	—	—	10.45	—	2nd Year.
Medicine, p. 25 { 1st and 3rd six weeks { 2nd and 4th six weeks	—	9	—	—	—	—	3rd Year.
Surgery, p. 25 .....	—	—	11	—	—	—	3rd Year.
Bacteriology and Surgical Pathology, p. 26	—	—	—	—	—	—	do.
Diseases of Women, p. 25, Oct., Nov., Dec.	12.30	4	12.30	4	4	—	do.
Pathological Anatomy (Practical), p. 26	9	—	—	9	—	9	do.
Diseases of the Eye, { Oct., Nov., Dec. p. 27 { Jan., Feb., Mar.	—	—	—	12.30	12	—	do.
Obstetric Demonstrations (six), p. 25 ...	—	9	—	—	9	—	3rd or 4th.
	—	—	—	—	—	11½-1½	do.
	5	—	—	—	5	—	do.
	—	—	—	—	5	—	do.
	—	—	4	—	—	—	do.

## SUMMER SESSION.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Years
Botany, p. 23 .....	—	10	10	—	—	—	1st Year.
Elementary Biology, p. 23 .....	2	—	2	—	—	—	do.
Practical Pharmacy (Demonstration), p. 25	—	—	—	12	—	—	do.
Chemistry and Practical Chemistry, p. 24	11-1	—	—	—	11-1	9½-11½	do.
Physiology, p. 24 { Lecture .....	—	10	10	10	—	—	do.
{ Practical Class	—	11-1	11-1	11-1	—	—	do.
Anatomical Demonstrations, p. 24 .....	11-4	11-4	11-4	11-4	11-4	11-1	2nd Year.
Midwifery, p. 25 .....	—	9	9	9	9	—	do.
Comparative Anatomy (six lectures), p. 23	—	—	—	—	2	—	do.
Practical and Manipulative Surgery, p. 25	9	—	—	—	—	—	do.
Pathological Anatomy, p. 26 .....	—	—	12	—	12	—	3rd Year.
Do. Demonstration, p. 26 .....	—	—	—	—	—	11	do.
Forensic Medicine, p. 26 .....	—	4	—	4	—	9	do.
Mental Diseases, p. 27 .....	—	—	—	12.30	—	—	do.
Public Health and Sanitary Science, p. 27	12	—	—	—	—	—	do.
Pharmacology and Therapeutics, p. 24 ...	—	—	4.30	—	4.30	12	do.
Diseases of the Eye, p. 27 .....	—	—	—	5	—	—	3rd or 4th.
Practical Bacteriology (six meetings), p. 26	—	—	—	12	—	—	do.

*The times of delivery of the Clinical Lectures are arranged, in accordance with other work, in the course of the Session.*



## SCHOLARSHIPS, PRIZES, APPOINTMENTS, & HONORARY DISTINCTIONS.

### OPEN SCHOLARSHIPS IN NATURAL SCIENCE.

As an inducement to the study of Natural Science before the commencement of the strictly Medical Course, two Scholarships, of the value of £150 (*i.e.*, a free admission) and £60 respectively, are awarded annually, after an examination in Physics, Chemistry, and either Botany, Zoology or Physiology, at the option of Candidates. The Medical School Committee is empowered to grant an Exhibition of £20 to any *unsuccessful* competitor who obtains sufficient marks to qualify for a Scholarship.

These Scholarships are open to all Students not exceeding 24 years of age who have passed a recognised Preliminary Examination in Arts, and have not yet attended Lectures on Anatomy of the first year, without any condition as to their becoming Students of the Hospital, except in the case of successful Candidates, who must enter at once for the full curriculum. The Examination will be conducted by means of written papers and practical work, and will be held on the 28th, 29th, and 30th of September, 1896. The standard, so far as the subjects are the same, will be that of the Preliminary Scientific Examination for Honours of the University of London. Competitors are required to send in their names with choice of optional subject and Certificate of Birth and of Preliminary Examination to the Medical Secretary not later than September 19th.

### SCHOLARSHIP IN ANATOMY, PHYSIOLOGY & CHEMISTRY.

A Scholarship of the value of £50 will be offered for competition in the last week of September. It is open to Students who have completed their examinations in Anatomy, Physiology, and Materia Medica and Pharmacy for a Medical Degree in any of the Universities of the United Kingdom, and have not entered as Students in any London Medical School.

### THE WILLIAM TITE SCHOLARSHIP.

This Scholarship, founded by the late Sir W. TITE, C.B., M.P., F.R.S., of the value of £27 10s., is awarded each year to the Student placed highest in the 1st Class List in the examinations at the end of the first Winter Session. Preference, in case of equality between Students, is to be given to the son of a medical man, and more particularly of one who has been educated at St. Thomas's Hospital or is in Practice in Bath.

### THE MUSGROVE SCHOLARSHIP.

This Scholarship, founded by Sir JOHN MUSGROVE, Bart., the late President of the Hospital, of the value of £38 10s., is awarded biennially to the Student who shall take the highest place in the 1st Class List in the examinations at the end of the Second Winter Session. It is tenable for two years, provided the holder obtains a place in the 1st Class in the Examinations at the end of the third winter.

### THE PEACOCK SCHOLARSHIP.

This Scholarship, founded by the will of the late Dr. THOMAS BEVILL PEACOCK, for many years Physician, and at the time of his death Consulting Physician to St. Thomas's Hospital, is of the same value as the Musgrove Scholarship; is awarded and held upon the same terms; and is given every second year in alternation with that Scholarship.

### THE BEANEY SCHOLARSHIP.

This Scholarship, founded by the will of the late Dr. BEANEY, of the value of £50, is awarded biennially, after an examination in Surgery and Surgical Pathology, to a student who shall have completed his fifth but not his seventh year. The examination is held during the Summer Session.

### THE SALTERS' COMPANY RESEARCH FELLOWSHIP.

This Fellowship of the annual value of £100 has been established and endowed by the Salters' Company, with a view to the promotion of research

in Pharmacology. The Fellowship is awarded to a properly qualified person by the Company on the nomination of the Treasurer of St. Thomas's Hospital and a Committee of Selection. It may be held for a term of three years, the Fellow carrying on his researches at St. Thomas's Hospital and giving annual evidence of the performance of satisfactory work to the Committee of Selection. The Fellow is required to devote his whole time to research and to hold no other office or appointment except by special permission of the Salters' Company, granted on the strong recommendation of the Committee of Selection.

## PRIZES.

The following Scholarships, Prizes, and Medals, will be offered for Competition during the year 1896-1897:—

**TWO OPEN SCHOLARSHIPS IN NATURAL SCIENCE** of the value of £150 and £60 respectively, at the commencement of the 1st year.

**ONE OPEN SCHOLARSHIP IN ANATOMY, PHYSIOLOGY AND CHEMISTRY** of the value of £50, at the commencement of the 3rd year  
AT THE END OF FIRST YEAR.

<i>Winter.</i>	1st.	...	The William Tite Scholarship	...	...	£27	10s.
	2nd.	...	College Prize	...	...	£20.	
	3rd.	...	Ditto	...	...	£10.	
<i>Summer.</i>	1st.	...	College Prize	...	...	£15.	
	2nd.	...	Ditto	...	...	£10.	

### SECOND YEAR.

<i>Winter.</i>	1st.	...	The Musgrove Scholarship	...	...	£38	10s.
	2nd.	...	College Prize	...	...	£20.	
	3rd.	...	Ditto	...	...	£10.	
<i>Summer.</i>	1st.	...	College Prize	...	...	£15.	
	2nd.	...	Ditto	...	...	£10.	

### THIRD YEAR.

**Second Tenure of the Peacock Scholarship (if**

holder obtains 1st Class in this examination) ... £38 10s.

<i>Winter.</i>	1st.	...	College Prize	...	...	£20.	
	2nd.	...	Ditto	...	...	£15.	
	3rd.	...	Ditto	...	...	£10.	
<i>Summer.</i>	1st.	...	College Prize	...	...	£15.	
	2nd.	...	Ditto	...	...	£10.	

Students of each year are classed according to their respective merits in the examinations, and those in the *first* class in each year receive Certificates of Honour, and a preference in the selection for Hospital Appointments.

Free Scholarships are given to distinguished Pupils of Merchant Taylors' and City of London Schools, and Epsom College.

In addition there are awarded—

THE CHESELDEN MEDAL, *Annually.*

THE MEAD MEDAL, *do.*

THE SOLLY MEDAL AND PRIZE, *Biennially.* (1898.)

THE BEANEY SCHOLARSHIP, *do.* (1898.)

THE GRAINGER TESTIMONIAL PRIZE, *Annually.*

THE TREASURER'S GOLD MEDAL, *do.*

THE BRISTOWE MEDAL, *do.*

Intending Competitors, especially those who have spent a part of their curriculum elsewhere, should apply to the Medical Secretary for detailed regulations.

THE CHESELDEN MEDAL, founded by the late GEORGE VAUGHAN, Esq., is annually awarded to the Fifth Year's Student who most distinguishes himself in respect of a Special Practical Examination in Surgery and Surgical Anatomy.

THE MEAD MEDAL, founded by Mr. and Mrs. NEWMAN SMITH, is awarded annually to a Fifth Year's Student, in respect of a Special Practical Examination in Medicine, Pathology and Hygiene.

The SOLLY MEDAL, together with a Prize in Money, will be awarded biennially. Those Students are eligible to compete who shall be of from three to six years' standing. The award is made for the best series of Reports of Surgical cases coming under the Student's personal observation in the Wards, not, however, to exceed ten in number.

The BRISTOWE MEDAL will be awarded annually in respect of a special Practical Examination in Pathology and Morbid Anatomy.

The GRAINGER TESTIMONIAL PRIZE, of the value of Fifteen Pounds, is awarded annually for work in Anatomy and Physiology. The conditions of competition for this Prize have recently been altered, and can be learnt from the Medical Secretary.

The TREASURER'S GOLD MEDAL for General Proficiency and Good Conduct, is awarded at the end of the 5th Winter Session to the Student who has passed through his pupillage in St. Thomas's Hospital in the most meritorious manner (printed regulations are posted in the Library).

### APPOINTMENTS.\*

A RESIDENT ASSISTANT PHYSICIAN and a RESIDENT ASSISTANT SURGEON, at a salary of £100 per annum each, are from time to time appointed. The appointments are annual, but the tenure of office may be renewed for a term not exceeding three years.

TWO HOSPITAL REGISTRARS, at an annual Salary of £100 each, are appointed in each year. They are eligible for annual re-appointment, but may not hold office for more than five years. Preference will be given to Gentlemen who have been distinguished for merit, and have completed their studies in the School. The payment of the Registrars is subject to the presentation of a Report upon the Practice of the Hospital, and to such Report being regarded as satisfactory by the Medical Officers to whom it shall have been referred.

AN OBSTETRIC TUTOR AND REGISTRAR is appointed each year, at an annual salary of £50. He is eligible for annual reappointment, but may not hold office for more than five years consecutively. The holder of the office takes part in the tutorial instruction of students, under the direction of the Obstetric Physician.

**House Appointments, open to Students who have obtained their diplomas.**  
(*The duties of these offices commence on the first Tuesday in March, June, September, and December.*)

FOUR HOUSE PHYSICIANS, Four HOUSE SURGEONS, and Four ASSISTANT HOUSE SURGEONS, are selected every three months. The Assistant House Surgeons are non-resident, but the other Officers are provided with Rooms and Commons in the Hospital, free of expense.

A SENIOR and a JUNIOR OBSTETRIC HOUSE PHYSICIAN are selected every three months. The former is provided with Rooms and Commons in the Hospital, free of expense. The latter is provided with Commons, and must live near the Hospital.

TWO OPHTHALMIC HOUSE SURGEONS, Senior and Junior, are appointed for six months, one of whom receives a Salary at the rate of £50 per annum, and the other is provided with Commons. They must live near the Hospital.

CLINICAL ASSISTANTS in the Departments for Diseases of the Throat, Skin, and Ear, and in the Electrical Department, are appointed every three months.

In the Special Departments preference is given to those who have worked in a satisfactory manner therein as Clinical Clerks and Dressers.

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\* All these Appointments are open to Students without extra payment.



### Appointments for Un-qualified Students.

CLINICAL CLERKS and DRESSERS to In-patients are selected to the number of at least 100 each year, from amongst the most eligible pupils. The DRESSER on Accident Duty is provided with a Room and Commons in the Hospital. CLINICAL CLERKS and DRESSERS for the Out-patients are also appointed, to the number of at least 80 to 100 each year; applicants are required to have passed the 2nd examination of the Conjoint Board, or an equivalent examination, and to have attended a course of instruction in Elementary Clinical Medicine (p. 25). (*The Duties commence on the first Tuesday in January, April, July, and October.*)

OBSTETRIC CLERKS are appointed, in rotation, from a list of Students who have entered their names for the purpose, have attended Lectures on Midwifery and a course of Elementary Practical Obstetrics, and have passed the "Second Conjoint," or an equivalent Examination. Each Clerk holds office for three weeks, and Special Certificates are awarded to those Gentlemen who have satisfactorily attended Sixty Maternity cases. About 50 Obstetric Clerks are appointed yearly.

ASSISTANTS TO THE TEACHERS OF PRACTICAL AND MANIPULATIVE SURGERY are appointed for the Winter and Summer Sessions.

ASSISTANTS TO THE LECTURER ON MATERIA MEDICA are appointed for the Summer Session.

Students are appointed to act as ASSISTANTS to the DEMONSTRATORS of MORBID HISTOLOGY and of MORBID ANATOMY.

ASSISTANTS IN THE CHEMICAL DEPARTMENT are selected from those who have passed the PREL. SCI. UNIV. LOND. or who are similarly qualified.

ASSISTANTS IN THE PHYSIOLOGICAL LABORATORY are selected from Students who have completed their Second Winter Session.

ANATOMICAL REGISTRARS and PROSECTORS are appointed in the early part of the Winter Session, also ASSISTANTS TO THE TEACHER OF ELEMENTARY BIOLOGY.

### REGULATIONS FOR THE EXAMINATION AND CLASSIFICATION OF THE STUDENTS AT THE MEDICAL SCHOOL.

1. In accordance with the Regulations of the Qualifying Bodies, Students must attend the Class Examinations in the subjects for which they have to be certified, and show by their answers to the questions that they have paid proper attention to the Lectures, otherwise the signature to their Schedules may be withheld.

2. There shall be held at least two Examinations in each Winter and one in each Summer Session in each subject on which attendance is required during that Session, and the marks obtained in these Examinations shall be the basis for the Classification of Students and the Award of Prizes for each Session respectively. Provided that any extra Examination in the course of the Session, in any subject, be not allowed to interfere with the ordinary Lectures in other subjects.

3. The number of marks allotted to each subject in the following Schedule is not to be exceeded in case the number of Examinations held during the Session be more than two, but must be distributed amongst the several Examinations.

#### 1st YEAR'S SUBJECTS.

WINTER ...	Anatomy ... ..	500
	Practical Anatomy ... ..	300
	Physiology ... ..	300
	Elementary Biology ... ..	300
	Chemistry and Practical Chemistry ... ..	600
	Total ... ..	2000
SUMMER ...	Chemistry and Practical Chemistry ... ..	300
	Practical Pharmacy ... ..	200
	Practical Physiology ... ..	300
	Total ... ..	800

#### 2nd YEAR'S SUBJECTS.

WINTER ...	Anatomy ... ..	500
	Practical Anatomy ... ..	300
	Physiology ... ..	600
	Practical Physiology ... ..	200
	Total ... ..	1600
SUMMER ...	Midwifery ... ..	500
	Practical Surgery ... ..	200
	Total ... ..	700



## 3rd YEAR'S SUBJECTS.

WINTER ...	Medicine ... ..	650
	Surgery ... ..	650
	Practical Surgery ... ..	300
	Total ... ..	1600

SUMMER ...	Forensic Medicine ... ..	200
	Pathological Anatomy ... ..	350
	Pharmacology and Therapeutics ... ..	400
	Mental Diseases and Public Health... ..	200
	Total ... ..	1600

4. Students must obtain at least one-third of the total number of marks in each subject, and not less than two-thirds of the total number allotted to all the subjects collectively, to be placed in the 1st Class.

Those who have obtained one-third of the total number of marks allotted to all the subjects collectively are placed in the 2nd Class.

The names of those who do not obtain either a 1st or 2nd Class position are not published, but a General List showing the exact position of each Student at every Examination is kept by the Secretary, from whom any Student can learn his own position, but no Lecturer shall make known to Students the number of marks obtained by any Student in any subject.

5. The Prizes shall be awarded to the Students holding the 1st, 2nd, and 3rd positions in the 1st Class of each Winter Session, and to those holding the 1st and 2nd positions of the 1st Class in each Summer Session.

6. The number of marks allotted to the Examinations for the MEAD and CHESELDEN Medals shall be 600 each.

7. In awarding the TREASURER'S Medal the number of marks obtained at the Sessional Examinations and in the MEAD and CHESELDEN Examinations shall be counted, provided that, as regards the Examination for the Medals, two-thirds of the maximum marks be obtained, but those obtained in the Entrance Scholarship Competition shall not be included.

8. The Authorities reserve the right of withholding any prize, if no competitor of sufficient merit present himself.

## Distribution of Prizes for the Past Sessions.

## SUMMER SESSION, 1895.

## FIRST YEAR'S STUDENTS.

J. GAFF, <i>Kennington Road</i> ... ..	{ College Prize, £15, and Certificate of Honour.
A. E. SOFTLY, <i>Worthing</i> ... ..	{ College Prize, £10, and Certificate of Honour.
B. FAWCETT, <i>Upper Tooting</i> ... ..	Certificate of Honour.
A. BEVAN, <i>Elm Park Gardens</i> .. ..	Certificate of Honour.
T. PERRIN, <i>Seaton</i> ... ..	Certificate of Honour.

## SECOND YEAR'S STUDENTS.

J. F. McCLEAN, <i>Brixton</i> ... ..	{ College Prize, £15, and Certificate of Honour.
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## THIRD YEAR'S STUDENTS.

A. W. SIKES, <i>Garrycloyne, Blarney</i> ... ..	{ College Prize, £15, and Certificate of Honour.
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## WINTER SESSION, 1895-6.

## ENTRANCE SCIENCE SCHOLARSHIPS.

F. B. SKERRETT, <i>Newcastle, Staffs.</i> ... ..	{	First Scholarship, £150,
W. B. FRY, <i>Streatham Hill</i> ... ..		Scholarship, £20,
		and Certificate of Honour.

## UNIVERSITY SCHOLARSHIP.

P. W. G. SARGENT, <i>Clifton</i> ... ..	{	Scholarship, £50,
		and Certificate of Honour.

## FIRST YEAR'S STUDENTS.

C. F. SELOUS, <i>Upper Norwood</i> ... ..	{	The Wm. Tite Scholarship,
		£27 10s.,
		and Certificate of Honour.
W. B. FRY, <i>Streatham Hill</i> ... ..	{	College Prize, £20,
		and Certificate of Honour.
F. B. SKERRETT, <i>Newcastle, Staffs.</i> ... ..	{	College Prize, £10,
		and Certificate of Honour.
S. HUNT, <i>Hampstead</i> .. ...		Certificate of Honour.
H. H. KIDDLE, <i>Peckham Rye</i> ... ..		Certificate of Honour.
H. S. STANNUS, <i>Larkhall Rise</i> ... ..		Certificate of Honour.

## SECOND YEAR'S STUDENTS.

J. GAFF, <i>Kennington Road</i> ... ..	{	The Peacock Scholarship,
		£38 10s.,
		and Certificate of Honour.
H. T. D. ACLAND, <i>Hyde Park Gardens</i> ... ..	{	College Prize, £20,
		and Certificate of Honour.
A. W. JONES, <i>Portland Place</i> ... ..	{	College Prize, £10,
		and Certificate of Honour.

## THIRD YEAR'S STUDENTS.

H. E. HEWITT, <i>Croydon</i> ... ..	{	College Prize, £20, and 2nd
		Tenure of Musgrove Scholarship, and Certificate of Honour.
R. W. C. PIERCE, <i>Llandudno</i> ... ..	{	College Prize, £15, and
		Certificate of Honour.

## PRACTICAL MEDICINE.

A. W. SIKES, <i>Garrycleyne, Blarney</i> ... ..	{	The Mead Medal, founded by
C. G. SELIGMANN, <i>Maida Vale</i> ... ..		Mr. and Mrs. NEWMAN SMITH.
		Certificate of Honour.

## SURGERY AND SURGICAL ANATOMY.

J. P. SCATCHARD, <i>Boston Spa</i> ... ..	{	The Cheselden Medal,
		founded by the late GEORGE
G. D. HOWLETT, <i>Balham Park Road</i> ... ..		VAUGHAN, Esq.
L. GILBERT, <i>Kensington</i> .. ...		Certificate of Honour.
		Certificate of Honour.

## PATHOLOGY AND MORBID ANATOMY.

E. L. COLLIS, <i>Stourbridge</i> ... ..	{	The Bristow Medal.
J. S. HALL, <i>Grantham</i> .. ...		Certificate of Honour.

## SURGERY AND SURGICAL PATHOLOGY.

B. DYBALL, <i>Reigate</i> ... ..	{	The Beaney Scholarship, £52 10s.
E. O. THURSTON, <i>Panton Street</i> ... ..		Certificate of Honour.

## FOR REPORTS OF SURGICAL CASES.

E. H. T. NASH, <i>Bedford Park</i> ... ..	{	The Solly Medal and Prize,
		£20.

## FOR GENERAL PROFICIENCY AND GOOD CONDUCT.

J. P. SCATCHARD, <i>Boston Spa</i> ... ..	{	The Treasurer's Gold Medal.

# **CERTIFICATES OF HONOUR.**

## **HOUSE PHYSICIANS.**

E. G. C. DANIEL  
L. L. JENNER  
F. B. THORNTON  
W. E. DIXON

P. J. A. SECOMBE  
E. G. LAYTON  
E. W. PALIN  
P. S. HICHENS

*Non-Resident*

## **HOUSE SURGEONS.**

E. O. THURSTON  
A. L. HOME  
W. G. STONE

H. J. DAVIS  
L. A. R. WALLACE  
H. C. CROUCH

J. L. PRAIN  
G. J. CONFORD

## **ASSISTANT HOUSE SURGEONS.**

W. G. STONE  
H. J. DAVIS  
L. A. R. WALLACE  
H. C. CROUCH

J. L. PRAIN  
G. J. CONFORD  
B. DYBALL

P. W. KENT  
J. SMITH  
W. D. FRAZER

## **OBSTETRIC HOUSE PHYSICIANS.**

*Senior*—S. W. F. RICHARDSON  
G. CANDLER  
E. A. SAUNDERS  
G. G. GENGÉ

*Junior*—G. CANDLER  
E. A. SAUNDERS  
G. G. GENGÉ  
C. W. GRANT WILSON

## **OPHTHALMIC HOUSE SURGEONS.**

A. H. P. DAWNEY

E. A. SAUNDERS

## **CLINICAL ASSISTANTS IN THE SPECIAL DEPARTMENTS.**

Throat  
J. L. PRAIN  
J. W. CORNWALL  
W. THORNELEY

Skin  
F. V. MILWARD  
W. D. KNOCKER  
G. R. HARCOURT

Ear  
R. G. STRANGE

Electrical  
A. B. BLACKER  
W. E. DIXON  
F. J. BRAKENRIDGE

# **CERTIFICATES OF PROFICIENCY.**

## **ANATOMICAL REGISTRARS.**

H. E. HEWITT

R. W. C. PIERCE

## **PROSECTORS.**

H. T. D. ACLAND  
A. BEVAN

H. CALVERT  
J. GAFF

A. E. SOFTLY  
Y. TAKAKI

## **ASSISTANTS IN THE PHYSIOLOGICAL LABORATORY.**

S. O. BINGHAM

J. F. MCCLEAN

## **ASSISTANTS IN THE CHEMICAL LABORATORY.**

W. B. FRY

F. B. SKERRETT

## **ASSISTANTS IN THE PATHOLOGICAL LABORATORY.**

J. S. HALL  
H. J. MARRIAGE

A. OSBORNE  
H. H. SANGUINETTI

A. W. SIKES  
J. B. TOMBLESON

## **ASSISTANTS IN THE BIOLOGICAL LABORATORY.**

A. BEVAN  
W. B. FRY

H. S. HARRIS  
Z. MENNELL

C. F. SELOUS

## **ASSISTANTS TO THE LECTURER ON MATERIA MEDICA.**

H. C. CROUCH

S. D. TURNER

## **ASSISTANTS TO THE TEACHERS OF PRACTICAL SURGERY.**

E. L. COLLIS  
C. E. DURRANT

B. DYBALL  
F. H. GERVIS

P. S. HICHENS  
E. H. T. NASH

The following Distinctions in the University of London have been obtained by Students of St. Thomas's Hospital during the past year :—

## **HONOURS EXAMINATIONS—UNIV. LOND.**

Gold Medal in Surgery (B.S.), Mr. A. E. RUSSELL.

First Class in Forensic Medicine (M.B.), Mr. T. G. NICHOLSON.

Exhibition and Gold Medal in Organic Chemistry and Second Class in Materia Medica (Intermed. M.B.), Mr. R. W. C. PIERCE.

Third Class in Anatomy and Second Class in Materia Medica (Intermed. M.B.), Mr. H. E. HEWITT.

First Class in Chemistry (Prel. Sci.), Mr. C. A. HILL.

First Class in Zoology (Prel. Sci.), Mr. A. B. LINDSEY.

# FEES FOR ATTENDANCE ON THE LECTURES

AND ON THE

## PRACTICE OF THE HOSPITAL.

### COMPOSITION FEES.

The Composition Fee\* to Hospital Practice and Lectures may be paid in the following ways:

- 1st. One Hundred and Fifty Pounds on entrance in one sum;
- 2nd. One Hundred and Fifty-seven Pounds Ten Shillings in instalments;
  - (a) By two payments, £85 on entrance, and £72 10s. at the beginning of the second year;
  - (b) By three payments, £75 at the beginning of the first year, £50 at the beginning of the second year, and £32 10s. at the beginning of the third year;
  - (c) By four payments, £65 at the beginning of the first year, £50 at the beginning of the second year, £30 at the beginning of the third year, and £12 10s. at the beginning of the fourth year.

Gentlemen entering at St. Thomas's for Lectures and Hospital Practice of the second and subsequent years pay £130 on entrance, or three instalments of £52 10s., £42, and £42 (see pages 18 and 19). Students entering for Lectures and Hospital Practice of third and subsequent years (see page 19) pay a composition fee of £80, or £52 10s. on entrance, and £31 10s. one year subsequently.

The Fee for attendance on the *general* subjects required of Students in Dental Surgery, is for the two years, £65, or by instalments, £55 for the first year, and £15 for the second year. If certificates for *Dental* practice are also required, the special fee for that subject (page 37) has to be paid.

[N.B.—It should be understood that although the Composition Fees are intended to cover unlimited attendance on Lectures and Hospital Practice, yet if a student fail to pass the several professional examinations within periods deemed reasonable by the School authorities, he may be required to pay additional fees for attendance at practical Courses and Tutorial Classes, or his rights as a Student may be suspended or determined at any time by the School Committee, with the approval of the Treasurer.]

Legally qualified Medical Practitioners are admitted to the Hospital practice, and to the Lectures and Library, on payment of a fee of £15 15s. for unlimited attendance; but are not entitled to receive certificates for such attendance without payment for the special certificates required (see p. 37).

\* Students who have commenced the study of the Profession otherwise than by attendance at a Medical School, will be considered to be first year's Students, on joining the Medical School, but a deduction from the Composition Fee will be allowed in such cases.

NOTE.—Cheques may be made payable to the Medical Secretary, and crossed "London and County Bank, Lambeth."



The Courses may be attended separately on the following terms, which entitle to Certificates for such Attendances.

*For the Medical and Surgical Practice, including Clinical Lectures and the Special Departments.*

Three months ... ..	£21.	Twelve months...	£36 15s.
Six months ... ..	£26 5s.	Unlimited ... ..	£73 10s.

The Practice of the Medical or Surgical Wards, or any one of the Special Departments, may be attended separately.

	<i>Medical or Surgical.</i>	<i>Each Special Department.</i>
Three months ... ..	£15 15s.	£5 5s.
Six months ... ..	£21.	£10 10s.
Twelve months ... ..	£26 5s.	£15 15s.

*Lectures and Demonstrations.*

Anatomy, Physiology ... ..	each	£10 10s.
Practical Anatomy (twelve months), Practical Physiology, including Histology ... ..	each	£10 10s.
Medicine, Surgery, Chemistry ... ..	"	£7 7s.
Midwifery ... ..	"	£6 6s.
Pharmacology and Therapeutics, Physics, Forensic Medicine each ... ..	"	£5 5s.
Pathology, including Pathological Histology ... ..	"	£8 8s.
Diseases of Women, Public Health, Insanity, Diseases of the Eye ... ..	each	£3 3s.
Practical Medicine, Practical Obstetrics, Laryngology ... ..	"	£3 3s.
Practical Surgery, Practical Chemistry, Elementary Biology ... ..	"	£6 6s.
Demonstrations in Post-Mortem room (twelve months) ... ..	"	£10 10s.

NOTE.—A small charge for materials is made for all Practical Courses taken separately.

**SPECIAL COURSES (not included in the Composition Fee) and EXTRA EXPENSES.**

Comparative Anatomy ... ..	£2 2s.
Botany ... ..	£3 3s.
Operative Surgery ... ..	£5 5s.
Ditto of Eye ... ..	£2 2s.
Advanced Anatomy, Advanced Physiology ... ..	each £6 6s.
Public Health—Six months' Laboratory Instruction for the Diploma ... ..	£21.
Ditto Short Course ... ..	£6 6s.
Practical Bacteriology ... ..	£1 1s.
Vaccination ... ..	£1 1s.
Practical Instruction in Pharmacy ... ..	£3 3s.
Attendance at a Fever Hospital of the Metropolitan Asylums Board ... ..	£3 3s.
Attendance at a recognised Lunatic Asylum ... ..	£3 3s.

Students who pay a Composition Fee are now supplied with chemicals and materials for one course of Practical Chemistry, Practical Physiology, and Elementary Biology without extra charge, but there are certain instruments and materials required during the course of study, as follows, viz.:

Those attending Elementary Biology, Practical Physiology and Physiological Demonstrations must provide themselves with Microscopes.

Students Dissecting pay for the "parts" they dissect at fixed rates, which are notified in the Library.

Each Clinical Clerk must provide himself with a Stethoscope and Registering Clinical Thermometer. Each Dresser is required to have a Registering Clinical Thermometer, a Pocket Case of Instruments, and a Case of Silver or Plated Catheters.

# UNIVERSITY OF LONDON.

## Preliminary Scientific and Intermediate M.B. Classes.

### PRELIMINARY SCIENTIFIC EXAMINATION.

Special instruction in the subjects required for this Examination is given in the form of (a) Lectures and (b) Classes, from October to July.

		Mon.	Tues.	Wed.	Thu.	Fri.	Sat.
A. W. BENNETT, M.A.	Botany. { Lectures (Summer)	—	10.0	10.0	—	—	—
	Classes (Winter & Summer)	—	—	11.0	—	—	—
W. R. DUNSTAN, M.A., F.R.S.	Chemistry. { Lectures (Winter)	—	—	12.0	—	12.0	—
		—	—	—	12.0	—	—
		—	2.0	—	—	—	10.30 fm Jan
	Practical (Winter)	—	2.0	—	—	—	9.30
	„ (Summer)	11.0	2.0	—	—	12.0	—
			Laboratory open daily				
W. R. DUNSTAN, M.A., F.R.S., and	Physics. { Lectures } Winter	2.0	—	9.30	—	—	10.30
		—	—	9.0	9.0	—	—
H. R. LESUEUR, B.Sc.	and { Practical Work } Summer	—	—	—	2.0	—	—
		—	—	—	—	—	—
F.G. PARSONS, F.R.C.S.	Zoology. { Classes (Winter)	—	—	1.30	—	—	—
	„ (Summer)	9.30	—	—	10.30	—	—
			Laboratory open daily				

N.B.—A Microscope and simple Dissecting Apparatus must be provided by each Member of the Class, and Two Guineas are charged for materials.

Fee, inclusive of Practical Chemistry ... .. *Sixteen Guineas.*

Fee for any single subject ... .. *Five Guineas.*

Subsequent Courses, half Fee, if recommended by the respective Teachers.

In the Practical Classes of Botany and Zoology, each Student has the opportunity of dissecting the chief types.

### INTERMEDIATE EXAMINATION IN MEDICINE.

		Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
G. H. MAKINS, F.R.C.S., and	Anatomy. { Jan.to Mar.	—	9.30	—	9.30	—	—
	H. B. ROBINSON, M.S. { May to July	12.45	10.0	12.45	—	10.0	—
T. G. BRODIE, M.D. Lond.	Physiology & Histology { Oct.to Mar.	2—4	—	2—4	—	—	—
	{ May to July	—	—	—	—	11—1	—
W. R. DUNSTAN, M.A., F.R.S.	Organic Chemistry.* { Jan.to Mar.	—	2.0	—	—	2.0	—
	{ May to July	—	3—4.30 Practical work 2.30	3.0 Practical work	2.0 Practical work	2.0	—
E. WHITE, B.Sc.	Materia Medica and { May to July	—	—	2.0	—	—	—
	Pharm. Chemistry. { }	—	—	—	—	—	—

Fee to Students of the Hospital, inclusive of

Organic Analysis and Chemicals ... .. *Nine Guineas.*

To others ditto ... .. *Twelve Guineas.*

Subsequent Courses, half Fee, if recommended by the respective Teachers.

\* Students are strongly advised to attend the lectures in this subject immediately they have passed the Preliminary Scientific Examination, and the lectures, revision classes and practical work in the next session.

NOTE.—Private Classes are held for the Final M.B. Examination.

# St. Thomas's Hospital.

## MEDICAL AND PHYSICAL SOCIETY.

*President, 1896—97.*

MR. W. H. BATTLE.

*Vice-Presidents.*

DR. ACLAND.  
MR. ANDERSON.  
DR. CULLINGWORTH.  
MR. FOX SYMONS.

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MR. J. F. MCCLEAN.  
MR. E. A. GATES.  
MR. H. T. D. ACLAND.

MR. H. R. BEALE.  
MR.  
MR.

This Society was originated in the early part of the present century by students of the Hospital, and has for its object the reading and discussion of papers on Medicine, Surgery, and subjects of General Interest, the narration of cases, and the exhibition of specimens of Physiological and Pathological interest. The Meetings are held in the Library on alternate Thursdays at 8.30 p.m., and terminate not later than 10 p.m.

Further information can be obtained of the Hon. Secretaries.

## ST. THOMAS'S HOSPITAL REPORTS.

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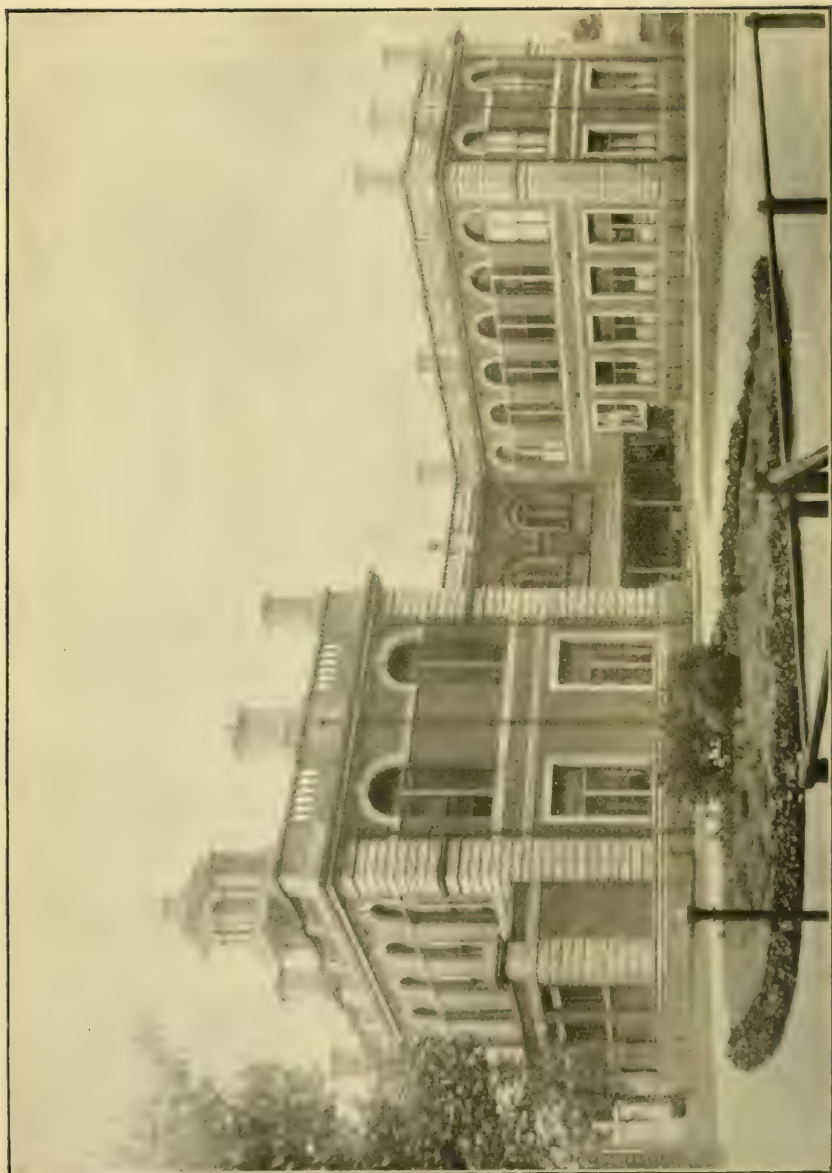
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MEDICAL SCHOOL, NORTH VIEW.



# SEPTEMBER, 1896.

|    |    |                                                                         |
|----|----|-------------------------------------------------------------------------|
| 1  | Tu | House Officers, &c., commence duty.                                     |
| 2  | W  | Last day for applications for Clinical Clerkships and<br>[Dresserships. |
| 3  | Th |                                                                         |
| 4  | F  |                                                                         |
| 5  | S  |                                                                         |
| 6  | S  | Fourteenth Sunday after Trinity.                                        |
| 7  | M  |                                                                         |
| 8  | Tu |                                                                         |
| 9  | W  |                                                                         |
| 10 | Th |                                                                         |
| 11 | F  |                                                                         |
| 12 | S  |                                                                         |
| 13 | S  | Fifteenth Sunday after Trinity.                                         |
| 14 | M  |                                                                         |
| 15 | Tu | Meeting to appoint Clinical Clerks and Dressers.                        |
| 16 | W  |                                                                         |
| 17 | Th |                                                                         |
| 18 | F  |                                                                         |
| 19 | S  |                                                                         |
| 20 | S  | Sixteenth Sunday after Trinity.                                         |
| 21 | M  |                                                                         |
| 22 | Tu | St. Matthew. Last day for Entry for B.Sc. Exam., Univ.<br>[Lond.        |
| 23 | W  |                                                                         |
| 24 | Th |                                                                         |
| 25 | F  |                                                                         |
| 26 | S  |                                                                         |
| 27 | S  | Seventeenth Sunday after Trinity.                                       |
| 28 | M  |                                                                         |
| 29 | Tu | Last day for Entry Univ. Lond. M.B. Exam.                               |
| 30 | W  | Michaelmas Day.                                                         |
|    |    | Last day for Essay for Grainger Prize.                                  |

*The Hospital Entrance Scholarships Examination takes place during the last week of this month.*

# OCTOBER, 1896.

|    |    |                                               |
|----|----|-----------------------------------------------|
| 1  | TH |                                               |
| 2  | F  | Distribution of Prizes, 3 P.M. Annual Dinner. |
| 3  | S  |                                               |
| 4  | S  | Eighteenth Sunday after Trinity.              |
| 5  | M  |                                               |
| 6  | TU | Clinical Clerks and Dressers commence duty.   |
| 7  | W  |                                               |
| 8  | TH |                                               |
| 9  | F  | Meeting of Library Committee.                 |
| 10 | S  |                                               |
| 11 | S  | Nineteenth Sunday after Trinity.              |
| 12 | M  |                                               |
| 13 | TU |                                               |
| 14 | W  |                                               |
| 15 | TH |                                               |
| 16 | F  |                                               |
| 17 | S  |                                               |
| 18 | S  | Twentieth Sunday after Trinity. St. Luke.     |
| 19 | M  | Univ. Lond. B.Sc. Exam.                       |
| 20 | TU |                                               |
| 21 | W  |                                               |
| 22 | TH |                                               |
| 23 | F  |                                               |
| 24 | S  |                                               |
| 25 | S  | Twenty-first Sunday after Trinity.            |
| 26 | M  | Univ. Lond. M.B. Exam.                        |
| 27 | TU |                                               |
| 28 | W  | St. Simon and St. Jude.                       |
| 29 | TH |                                               |
| 30 | F  |                                               |
| 31 | S  |                                               |

*The Registration and Museum Committees meet during this month.*

*The Primary Examination of the Society of Apothecaries is held Quarterly, in the months of October, January, April, and July. The Final is held monthly; the Surgical part commences on the second Wednesday, and the Medical on the Monday following.*

*First, Second, and Third Examinations of the Examining Board in England are held this month.*

# NOVEMBER, 1896.

|    |    |                                                                                          |
|----|----|------------------------------------------------------------------------------------------|
|    |    | Notice—30th, last day for applications for Medical and<br>[Surgical Registrarships.      |
| 1  | S  | Twenty-second Sunday after Trinity. All Saints.                                          |
| 2  | M  |                                                                                          |
| 3  | Tu |                                                                                          |
| 4  | W  | Last day for applications for House Offices, &c.*                                        |
| 5  | Th |                                                                                          |
| 6  | F  |                                                                                          |
| 7  | S  |                                                                                          |
| 8  | S  | Twenty-third Sunday after Trinity.                                                       |
| 9  | M  | Entry for M.D. and M.S. Exams. Univ. Lond. Prince of                                     |
| 10 | Tu | [Wales born, 1841.                                                                       |
| 11 | W  | Meeting to appoint House Officers, &c.                                                   |
| 12 | Th |                                                                                          |
| 13 | F  |                                                                                          |
| 14 | S  |                                                                                          |
| 15 | S  | Twenty-fourth Sunday after Trinity.                                                      |
| 16 | M  |                                                                                          |
| 17 | Tu | Univ. Lond. M.B. Pass List published. Last day for<br>[Entry for B.S. Exam., Univ. Lond. |
| 18 | W  | Univ. Lond. M.B. Honours Exam.                                                           |
| 19 | Th |                                                                                          |
| 20 | F  |                                                                                          |
| 21 | S  | Univ. Lond. B.Sc. Pass List published.                                                   |
| 22 | S  | Twenty-fifth Sunday after Trinity.                                                       |
| 23 | M  |                                                                                          |
| 24 | Tu |                                                                                          |
| 25 | W  |                                                                                          |
| 26 | Th |                                                                                          |
| 27 | F  |                                                                                          |
| 28 | S  |                                                                                          |
| 29 | S  | Advent Sunday.                                                                           |
| 30 | M  | St. Andrew. Last day for applications for Medical and<br>[Surgical Registrarships.       |

*Examinations for the Fellowship of the Royal College of Surgeons of England held this month.*

*\* Applications for these appointments to be made to the Medical Secretary, by letter, stating the Candidate's qualifications, the office which he has previously held in the Hospital, and the number of Maternity Cases attended.*

# DECEMBER, 1896.

|    |    |                                                             |
|----|----|-------------------------------------------------------------|
| 1  | Tu | House Officers, &c., commence duty.                         |
| 2  | W  | Last day for applications for Clinical Clerkships and       |
| 3  | Th | [Dresserships.                                              |
| 4  | F  |                                                             |
| 5  | S  |                                                             |
| 6  | S  | Second Sunday in Advent.                                    |
| 7  | M  | Univ. Lond. M.D. and M.S. Exam.                             |
| 8  | Tu | Univ. Lond. B.S. Exam.                                      |
| 9  | W  | Meeting to appoint Clinical Clerks and Dressers.            |
| 10 | Th |                                                             |
| 11 | F  |                                                             |
| 12 | S  |                                                             |
| 13 | S  | Third Sunday in Advent.                                     |
| 14 | M  | Last day for Entry for Matriculation Univ. Lond.            |
| 15 | Tu |                                                             |
| 16 | W  |                                                             |
| 17 | Th |                                                             |
| 18 | F  |                                                             |
| 19 | S  |                                                             |
| 20 | S  | Fourth Sunday in Advent.                                    |
| 21 | M  | St. Thomas. Last day for Entry for Prel. Sci. and Int. Med. |
| 22 | Tu | [Exam. Univ. Lond.                                          |
| 23 | W  | Univ. Lond. M.D. List published.                            |
| 24 | Th |                                                             |
| 25 | F  | CHRISTMAS DAY.                                              |
| 26 | S  | Saint Stephen.                                              |
| 27 | S  | First Sunday after Christmas. Saint John, Evang.            |
| 28 | M  | Holy Innocents.                                             |
| 29 | Tu |                                                             |
| 30 | W  |                                                             |
| 31 | Th |                                                             |

*University of Cambridge First, Second, and Third M.B. Examinations are held this month.*

*Examinations for Diploma in Public Health of the Royal College of Physicians and Surgeons held this month.*



# JANUARY, 1897.

|    |    |                                                          |
|----|----|----------------------------------------------------------|
| 1  | F  | Circumcision.                                            |
| 2  | S  |                                                          |
| 3  | S  | Second Sunday after Christmas.                           |
| 4  | M  |                                                          |
| 5  | Tu | Clinical Clerks and Dressers commence duty.              |
| 6  | W  | Epiphany.                                                |
| 7  | Th |                                                          |
| 8  | F  | Meeting of Library Committee.                            |
| 9  | S  |                                                          |
| 10 | S  | First Sunday after Epiphany.                             |
| 11 | M  | Univ. Lond. Matriculation Examination.                   |
| 12 | Tu |                                                          |
| 13 | W  |                                                          |
| 14 | Th |                                                          |
| 15 | F  |                                                          |
| 16 | S  |                                                          |
| 17 | S  | Second Sunday after Epiphany.                            |
| 18 | M  | Univ. Lond. Prelim. Scientific (M.B.) Exam. and Intermd. |
| 19 | Tu | [Exam. in Medicine.                                      |
| 20 | W  |                                                          |
| 21 | Th |                                                          |
| 22 | F  |                                                          |
| 23 | S  |                                                          |
| 24 | S  | Third Sunday after Epiphany.                             |
| 25 | M  | Conversion of St. Paul.                                  |
| 26 | Tu |                                                          |
| 27 | W  |                                                          |
| 28 | Th |                                                          |
| 29 | F  |                                                          |
| 30 | S  |                                                          |
| 31 | S  | Fourth Sunday after Epiphany.                            |

*First, Second, and Third Examinations of the Examining Board in England are held this month.*

*The Registration and Museum Committees meet during this month.*

# FEBRUARY, 1897.

|    |    |                                                                                                                            |
|----|----|----------------------------------------------------------------------------------------------------------------------------|
| 1  | M  |                                                                                                                            |
| 2  | Tu |                                                                                                                            |
| 3  | W  | Last day for applications for House Offices, &c.*                                                                          |
| 4  | Th |                                                                                                                            |
| 5  | F  |                                                                                                                            |
| 6  | S  |                                                                                                                            |
| 7  | S  | Fifth Sunday after Epiphany.                                                                                               |
| 8  | M  |                                                                                                                            |
| 9  | Tu |                                                                                                                            |
| 10 | W  | Queen Victoria married, 1840.<br>Univ. Lond. Prel. Sci. (M. B.) List published. Meeting to<br>[appoint House Officers, &c. |
| 11 | Th |                                                                                                                            |
| 12 | F  |                                                                                                                            |
| 13 | S  |                                                                                                                            |
| 14 | S  | Septuagesima Sunday.                                                                                                       |
| 15 | M  |                                                                                                                            |
| 16 | Tu |                                                                                                                            |
| 17 | W  | Univ. Lond. Matric. and Int. Med. Pass Lists published.                                                                    |
| 18 | Th |                                                                                                                            |
| 19 | F  |                                                                                                                            |
| 20 | S  |                                                                                                                            |
| 21 | S  | Sexagesima Sunday.                                                                                                         |
| 22 | M  |                                                                                                                            |
| 23 | Tu |                                                                                                                            |
| 24 | W  | St. Matthias.                                                                                                              |
| 25 | Th |                                                                                                                            |
| 26 | F  |                                                                                                                            |
| 27 | S  |                                                                                                                            |
| 28 | S  | Quinquagesima Sunday.                                                                                                      |

\* Applications for these appointments to be made to the Medical Secretary, by letter, stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity cases attended.

# MARCH, 1897.

|    |    |                                                                                         |
|----|----|-----------------------------------------------------------------------------------------|
| 1  | M  |                                                                                         |
| 2  | Tu | House Officers, &c., commence duty.                                                     |
| 3  | W  | Ash Wednesday. Last day for applications for Clinical                                   |
| 4  | Th | [Clerkships and Dresserships.]                                                          |
| 5  | F  |                                                                                         |
| 6  | S  |                                                                                         |
| 7  | S  | First Sunday in Lent.                                                                   |
| 8  | M  |                                                                                         |
| 9  | Tu |                                                                                         |
| 10 | W  | Meeting to appoint Clinical Clerks and Dressers. Prince                                 |
| 11 | Th | [of Wales married, 1863.]                                                               |
| 12 | F  |                                                                                         |
| 13 | S  |                                                                                         |
| 14 | S  | Second Sunday in Lent.                                                                  |
| 15 | M  |                                                                                         |
| 16 | Tu |                                                                                         |
| 17 | W  |                                                                                         |
| 18 | Th |                                                                                         |
| 19 | F  |                                                                                         |
| 20 | S  |                                                                                         |
| 21 | S  | Third Sunday in Lent.                                                                   |
| 22 | M  |                                                                                         |
| 23 | Tu |                                                                                         |
| 24 | W  |                                                                                         |
| 25 | Th | Annunciation. LADY DAY.                                                                 |
| 26 | F  |                                                                                         |
| 27 | S  |                                                                                         |
| 28 | S  | Fourth Sunday in Lent.                                                                  |
| 29 | M  |                                                                                         |
| 30 | Tu |                                                                                         |
| 31 | W  | Last day for Reports for Solly Medal (1898). Registrar's<br>[Report for last year due.] |

# APRIL, 1897.

|    |    |                                                  |
|----|----|--------------------------------------------------|
| 1  | Th |                                                  |
| 2  | F  |                                                  |
| 3  | S  |                                                  |
| 4  | S  | Fifth Sunday in Lent.                            |
| 5  | M  | Last day for Entry for M.B. Exam. Univ. Lond.    |
| 6  | Tu | Clinical Clerks and Dressers commence duty.      |
| 7  | W  |                                                  |
| 8  | Th |                                                  |
| 9  | F  |                                                  |
| 10 | S  |                                                  |
| 11 | S  | Palm Sunday.                                     |
| 12 | M  |                                                  |
| 13 | Tu |                                                  |
| 14 | W  |                                                  |
| 15 | Th |                                                  |
| 16 | F  | Good Friday.                                     |
| 17 | S  |                                                  |
| 18 | S  | Easter Sunday.                                   |
| 19 | M  | Bank Holiday.                                    |
| 20 | Tu |                                                  |
| 21 | W  |                                                  |
| 22 | Th |                                                  |
| 23 | F  |                                                  |
| 24 | S  |                                                  |
| 25 | S  | First Sunday after Easter. Low Sunday. St. Mark. |
| 26 | M  |                                                  |
| 27 | Tu |                                                  |
| 28 | W  |                                                  |
| 29 | Th |                                                  |
| 30 | F  |                                                  |

*Univ. Camb. Third M.B. and First, Second, and Third Examinations of the Examining Board in England are held this month.*

*The Examinations for the Mead and Cheselden Medals take place this month.*

*The Annual Inspection of the Museum and meeting of Museum Committee take place during this month.*

*The Registration Committee meets during this month.*



# MAY, 1897.

|    |    |                                                           |
|----|----|-----------------------------------------------------------|
| 1  | S  | St. Philip and St. James.                                 |
| 2  | S  | Second Sunday after Easter.                               |
| 3  | M  | Univ. Lond. M.B. Exam.                                    |
| 4  | Tu |                                                           |
| 5  | W  | Last day for application for House Offices, &c.*          |
| 6  | Th |                                                           |
| 7  | F  |                                                           |
| 8  | S  |                                                           |
| 9  | S  | Third Sunday after Easter.                                |
| 10 | M  | [Queen, 1868.                                             |
| 11 | Tu | First Stone of St. Thomas's New Hospital laid by H.M. the |
| 12 | W  | Meeting to appoint House Officers, &c.                    |
| 13 | Th |                                                           |
| 14 | F  |                                                           |
| 15 | S  |                                                           |
| 16 | S  | Fourth Sunday after Easter.                               |
| 17 | M  | Last day for Entry for Matric. Univ. Lond.                |
| 18 | Tu |                                                           |
| 19 | W  |                                                           |
| 20 | Th |                                                           |
| 21 | F  |                                                           |
| 22 | S  |                                                           |
| 23 | S  | Fifth Sunday after Easter. Rogation Sunday.               |
| 24 | M  | Queen Victoria born, 1819.                                |
| 25 | Tu | Univ. Lond. M.B. Pass List published.                     |
| 26 | W  |                                                           |
| 27 | Th | Ascension Day. Holy Thursday.                             |
| 28 | F  |                                                           |
| 29 | S  |                                                           |
| 30 | S  | Sunday after Ascension Day.                               |
| 31 | M  |                                                           |

*Examinations for the Fellowship of the Royal College of Surgeons of England held this month.*

*\* Applications for these appointments to be made to the Medical Secretary, by letter, stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.*

# JUNE, 1897.

|    |    |                                                       |
|----|----|-------------------------------------------------------|
| 1  | TU | House Officers, &c., commence duty.                   |
| 2  | W  | Last day for applications for Clinical Clerkships and |
| 3  | TH | [Dresserships.                                        |
| 4  | F  |                                                       |
| 5  | S  |                                                       |
| 6  | S  | Whit Sunday.                                          |
| 7  | M  | Bank Holiday. No Lectures.                            |
| 8  | TU |                                                       |
| 9  | W  | Meeting to appoint Clinical Clerks and Dressers. New  |
| 10 | TH | Buildings of Medical School opened by H.R.H. the      |
| 11 | F  | [Duke of Connaught, K.G., 1894.                       |
| 12 | S  | St. Barnabas.                                         |
| 13 | S  | Trinity Sunday.                                       |
| 14 | M  | Univ. Lond. Matric. Exam. Last day for Entry for Int. |
| 15 | TU | [Med. Exam. Univ. London.                             |
| 16 | W  |                                                       |
| 17 | TH |                                                       |
| 18 | F  |                                                       |
| 19 | S  |                                                       |
| 20 | S  | First Sunday after Trinity. Queen's Accession.        |
| 21 | M  | New St. Thomas's Hospital opened by H. M. the Queen.  |
| 22 | TU | 1871. Last day for Entry for Prel. Sci. (M.B.) Exam.  |
| 23 | W  | [Univ. Lond.                                          |
| 24 | TH | St. John Baptist. Midsummer Day.                      |
| 25 | F  |                                                       |
| 26 | S  |                                                       |
| 27 | S  | Second Sunday after Trinity.                          |
| 28 | M  | Queen Victoria crowned, 1838.                         |
| 29 | TU | St. Peter.                                            |
| 30 | W  |                                                       |

*The Harveian Oration is delivered at the Royal College of Physicians annually in the month of June.*

*Doctor of Science Examination at London University takes place within the first 21 days of June.*

*Univ. Camb. First and Second M.B. Examinations are held within the first 14 days of June.*

*Examinations for Diploma in Public Health of the Royal Colleges of Physicians and Surgeons held this month.*

*Examination for the Beaney Scholarship held this month.*

# JULY, 1897.

|    |    |                                                                                                |
|----|----|------------------------------------------------------------------------------------------------|
| 1  | Th |                                                                                                |
| 2  | F  | Meeting of Library Committee.                                                                  |
| 3  | S  |                                                                                                |
| 4  | S  | Third Sunday after Trinity.                                                                    |
| 5  | M  |                                                                                                |
| 6  | Tu | Clinical Clerks and Dressers commence duty.                                                    |
| 7  | W  | Last day for applications for House Offices, &c., for                                          |
| 8  | Th | [September.*                                                                                   |
| 9  | F  |                                                                                                |
| 10 | S  |                                                                                                |
| 11 | S  | Fourth Sunday after Trinity.                                                                   |
| 12 | M  | Univ. Lond. Int. Med. Exam.                                                                    |
| 13 | Tu |                                                                                                |
| 14 | W  | Meeting to appoint House Officers, &c., for September.<br>[Univ. Lond. Matric. List published. |
| 15 | Th |                                                                                                |
| 16 | F  |                                                                                                |
| 17 | S  |                                                                                                |
| 18 | S  | Fifth Sunday after Trinity.                                                                    |
| 19 | M  | Univ. Lond. Prelim. Scientific (M.B.) Exam.                                                    |
| 20 | Tu |                                                                                                |
| 21 | W  |                                                                                                |
| 22 | Th |                                                                                                |
| 23 | F  |                                                                                                |
| 24 | S  |                                                                                                |
| 25 | S  | Sixth Sunday after Trinity. St. James.                                                         |
| 26 | M  |                                                                                                |
| 27 | Tu |                                                                                                |
| 28 | W  |                                                                                                |
| 29 | Th |                                                                                                |
| 30 | F  |                                                                                                |
| 31 | S  |                                                                                                |

*First, Second, and Third Examinations of the Examining Board in England are held this month.*

*The Registration and Museum Committees meet during this month.*

*\* Applications for these appointments to be made to the Medical Secretary, by letter stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.*

# AUGUST, 1897.

|    |    |                                                              |
|----|----|--------------------------------------------------------------|
| 1  | S  | Seventh Sunday after Trinity.                                |
| 2  | M  | Bank Holiday.                                                |
| 3  | Tu |                                                              |
| 4  | W  |                                                              |
| 5  | Th |                                                              |
| 6  | F  |                                                              |
| 7  | S  |                                                              |
| 8  | S  | Eighth Sunday after Trinity.                                 |
| 9  | M  |                                                              |
| 10 | Tu |                                                              |
| 11 | W  | Univ. Lond. Prelim. Sci. and Int. Med. Pass Lists published. |
| 12 | Th |                                                              |
| 13 | F  |                                                              |
| 14 | S  |                                                              |
| 15 | S  | Ninth Sunday after Trinity.                                  |
| 16 | M  |                                                              |
| 17 | Tu |                                                              |
| 18 | W  |                                                              |
| 19 | Th |                                                              |
| 20 | F  |                                                              |
| 21 | S  |                                                              |
| 22 | S  | Tenth Sunday after Trinity.                                  |
| 23 | M  |                                                              |
| 24 | Tu | St. Bartholomew.                                             |
| 25 | W  |                                                              |
| 26 | Th |                                                              |
| 27 | F  |                                                              |
| 28 | S  |                                                              |
| 29 | S  | Eleventh Sunday after Trinity.                               |
| 30 | M  |                                                              |
| 31 | Tu |                                                              |



# SEPTEMBER, 1897.

|    |    |                                                       |
|----|----|-------------------------------------------------------|
| 1  | W  | Last day for applications for Clinical Clerkships and |
| 2  | Th | [Dresserships.                                        |
| 3  | F  |                                                       |
| 4  | S  |                                                       |
| 5  | S  | Twelfth Sunday after Trinity.                         |
| 6  | M  |                                                       |
| 7  | Tu | House Officers, &c., commence duty.                   |
| 8  | W  |                                                       |
| 9  | Th |                                                       |
| 10 | F  |                                                       |
| 11 | S  |                                                       |
| 12 | S  | Thirteenth Sunday after Trinity.                      |
| 13 | M  |                                                       |
| 14 | Tu |                                                       |
| 15 | W  | Meeting to appoint Clinical Clerks and Dressers.      |
| 16 | Th |                                                       |
| 17 | F  |                                                       |
| 18 | S  |                                                       |
| 19 | S  | Fourteenth Sunday after Trinity.                      |
| 20 | M  | Last day for Entry for B.Sc. Exam., Univ. Lond.       |
| 21 | Tu | St. Matthew.                                          |
| 22 | W  |                                                       |
| 23 | Th |                                                       |
| 24 | F  |                                                       |
| 25 | S  |                                                       |
| 26 | S  | Fifteenth Sunday after Trinity.                       |
| 27 | M  | Last day for Entry Univ. Lond. M.B. Exam.             |
| 28 | Tu |                                                       |
| 29 | W  | Michaelmas Day.                                       |
| 30 | Th | Last day for Essay for Grainger Prize.                |

*The Hospital Entrance Scholarships Examination takes place during the last week of this month.*

# OCTOBER, 1897.

|    |    |                                             |
|----|----|---------------------------------------------|
| 1  | F  |                                             |
| 2  | S  |                                             |
| 3  | S  | Sixteenth Sunday after Trinity.             |
| 4  | M  |                                             |
| 5  | TU | Clinical Clerks and Dressers commence duty. |
| 6  | W  |                                             |
| 7  | TH |                                             |
| 8  | F  | Meeting of Library Committee.               |
| 9  | S  |                                             |
| 10 | S  | Seventeenth Sunday after Trinity.           |
| 11 | M  |                                             |
| 12 | TU |                                             |
| 13 | W  |                                             |
| 14 | TH |                                             |
| 15 | F  |                                             |
| 16 | S  |                                             |
| 17 | S  | Eighteenth Sunday after Trinity.            |
| 18 | M  | Univ. Lond. B.Sc. Exam. St. Luke.           |
| 19 | TU |                                             |
| 20 | W  |                                             |
| 21 | TH |                                             |
| 22 | F  |                                             |
| 23 | S  |                                             |
| 24 | S  | Nineteenth Sunday after Trinity.            |
| 25 | M  | Univ. Lond. M.B. Exam.                      |
| 26 | TU |                                             |
| 27 | W  |                                             |
| 28 | TH | St. Simon and St. Jude.                     |
| 29 | F  |                                             |
| 30 | S  |                                             |
| 31 | S  | Twentieth Sunday after Trinity.             |

*The Registration and Museum Committees meet during this month.*

*The Primary Examination of the Society of Apothecaries is held Quarterly, in the months of October, January, April, and July. The Final is held monthly; the Surgical part commences on the second Wednesday, and the Medical on the Monday following.*

*First, Second, and Third Examinations of the Examining Board in England are held this month.*

# HOLDERS OF APPOINTMENTS IN ST. THOMAS'S HOSPITAL SINCE 1871.

## RESIDENT ASSISTANT PHYSICIANS.

|                      |                          |
|----------------------|--------------------------|
| 1871. G. H. EVANS    | 1883. R. PERCY SMITH     |
| 1874. F. C. TURNER   | 1885. H. W. G. MACKENZIE |
| 1876. S. J. SHARKEY  | 1888. H. P. HAWKINS      |
| 1880. G. GULLIVER    | 1891. H. G. TURNEY       |
| 1882. C. E. SHEPPARD | 1894. S. G. TOLLER       |

## RESIDENT ASSISTANT SURGEONS.

|                       |                      |
|-----------------------|----------------------|
| 1871. W. W. WAGSTAFFE | 1886. W. H. BATTLE   |
| 1874. A. O. MACKELLAR | 1888. H. B. ROBINSON |
| 1876. H. H. CLUTTON   | 1891. E. C. STABB    |
| 1880. B. PITTS        | 1894. F. C. ABBOTT   |
| 1883. G. H. MAKINS    |                      |

## MEDICAL REGISTRARS.

|                        |                          |
|------------------------|--------------------------|
| 1871. S. E. SOLLY      | 1879. W. B. HADDEN       |
| 1872. F. POLLARD       | 1880. G. GULLIVER        |
| 1873. W. S. GREENFIELD | 1882. C. E. SHEPPARD     |
| 1875. H. W. VERDON     | 1883. W. B. HADDEN       |
| 1876. T. C. CHARLES    | 1888. H. W. G. MACKENZIE |
| 1877. E. S. NORRIS     | 1893. S. G. TOLLER       |
| 1878. T. C. CHARLES    | 1894. C. R. BOX          |

## SURGICAL REGISTRARS.

|                        |                      |
|------------------------|----------------------|
| 1871. W. ANDERSON      | 1881. W. H. BATTLE   |
| 1872. C. E. SAUNDERS   | 1886. G. H. MAKINS   |
| 1873. C. CREIGHTON     | 1887. C. A. BALLANCE |
| 1874. S. OSBORN        | 1888. E. SOLLY       |
| 1876. J. H. H. CLUTTON | 1891. E. C. STABB    |
| 1876. C. H. NEWBY      | 1892. F. C. ABBOTT   |
| 1878. H. P. POTTER     | 1894. C. S. WALLACE  |

## OBSTETRIC REGISTRAR.

1893. W. W. H. TATE

## HOUSE PHYSICIANS.

|          |                                                                                                                  |          |                                                                                                                                              |
|----------|------------------------------------------------------------------------------------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 1871-2.  | E. COX<br>S. OSBORN<br>J. S. SLATER                                                                              | 1884-5.  | G. D. JOHNSTON<br>F. F. CAIGER<br>H. B. ROBINSON<br>H. W. G. MACKENZIE<br>F. W. S. STONE } (Non-<br>H. H. LANKESTER } res.)                  |
| 1872-3.  | B. ADDY<br>A. H. LAVER<br>L. WILLIAMS<br>W. GARTON<br>R. ZIMMERMAN                                               | 1885-6.  | R. M. WILLIAMS<br>J. M. CLARKE<br>J. S. HUTTON<br>E. D. RITCHIE<br>T. GLOVER LYON } (Non-<br>Y. SANEYOSHI } res.)<br>F. M. HAIG              |
| 1873-4.  | E. WELCHMAN<br>H. B. DONKIN<br>T. HIGHTON<br>C. M. TAYLOR<br>H. S. BENNETT                                       | 1886-7.  | F. D. CROWDY<br>A. A. BROCKATT<br>C. S. EVANS<br>S. W. WHEATON<br>A. E. GODFREY } (Non-<br>A. J. H. MONTAGUE } res.)                         |
| 1874-5.  | A. S. L. NEWINGTON<br>J. W. CLARKSON<br>W. S. MAJOR<br>A. LINGARD                                                | 1887-8.  | H. P. HAWKINS<br>H. J. MACEVOY<br>W. W. ORD<br>E. HOBHOUSE<br>R. NAIRN<br>H. J. SMYTH } (Non-res.)<br>R. NAIRN }<br>J. T. CALVERT }          |
| 1875-6.  | C. H. NEWBY<br>G. F. ROSSITER<br>W. EDMUNDS<br>H. P. POTTER<br>S. W. J. JOSEPH                                   | 1888-9.  | H. B. LUARD<br>C. W. COOKE<br>H. C. BRISTOWE<br>H. G. TURNEY<br>C. H. ECCLES } (Non-<br>W. H. L. COPELAND } res.)                            |
| 1876-7.  | T. TWINING<br>J. F. NICHOLSON<br>J. R. LEESON<br>W. H. PAGE.                                                     | 1889-90. | T. P. COWEN<br>F. C. ABBOTT<br>F. E. FORWARD<br>S. G. TOLLER<br>M. H. SPENCER } (Non-<br>L. COBBETT } res.)                                  |
| 1877-8.  | J. A. M. MOULLIN<br>G. H. MAKINS<br>H. U. SMITH<br>W. TYRRELL.                                                   | 1890-1.  | W. W. STARR<br>T. A. DUKES<br>A. KING<br>W. F. UMNEY<br>G. H. WICKHAM } (Non-<br>H. J. COOPER } res.)<br>H. LOW }<br>C. P. LOVELL }          |
| 1878-9.  | W. H. BATTLE<br>G. H. D. GIMLETTE<br>C. E. SHEPPARD<br>F. M. SANDWITH                                            | 1891-2.  | C. R. BOX<br>T. H. KELLOCK<br>C. LATTER<br>J. J. PERKINS<br>C. WYMAN<br>G. R. F. STILWELL } (Non-<br>D. F. SHEARER } res.)<br>W. P. PURVIS } |
| 1879-80. | W. W. GROOME<br>R. P. SMITH<br>J. SHAW<br>A. NEWSHOLME                                                           |          |                                                                                                                                              |
| 1880-1.  | H. P. BUTLER<br>G. S. HATTON<br>H. R. HUTTON<br>T. D. ACLAND                                                     |          |                                                                                                                                              |
| 1881-2.  | T. D. SAVILL<br>C. F. COXWELL<br>A. B. CARPENTER<br>S. W. SUTTON                                                 |          |                                                                                                                                              |
| 1882-3.  | A. E. WELLS<br>W. WANSBROUGH JONES<br>C. W. HAIG-BROWN<br>W. FELL<br>E. F. WHITE } (Non-<br>L. W. BICKLE } res.) |          |                                                                                                                                              |
| 1883-4.  | A. FOXWELL<br>H. M. N. MILTON<br>C. D. GREEN<br>W. HULL<br>W. J. SHEPPARD } (Non-<br>I. ORFORD } res.)           |          |                                                                                                                                              |



HOUSE PHYSICIANS—*continued.*

|         |                                                                                                                                             |              |         |                                                                                                                                          |              |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------|------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 1892-3. | W. A. BOWRING<br>W. WATKINS-PITCHEFORD<br>C. S. JAFFE<br>A. R. O. MILTON<br>W. P. FOOKS<br>A. DALZELL<br>E. M. HAINWORTH<br>M. R. P. DORMAN | } (Non-res.) | 1894-5. | R. E. NIX<br>A. M. COLLCUTT<br>E. A. SAUNDERS<br>G. G. GENGE<br>T. G. NICHOLSON<br>A. S. F. GRUNBAUM<br>F. J. BRAKENRIDGE<br>J. W. LAVER | } (Non-res.) |
| 1893-4. | T. W. HICKS<br>G. W. THOMPSON<br>A. E. RUSSELL<br>W. J. C. MERRY<br>P. NORTHCOTE<br>G. W. H. BIRD<br>F. PERSHOUSE<br>C. W. WINDSOR          |              | 1895-6. | E. G. C. DANIEL<br>L. L. JENNER<br>F. B. THORNTON<br>W. E. DIXON<br>P. J. A. SECCOMBE<br>F. G. LAYTON<br>E. W. PALIN<br>P. S. HICHENS    |              |

## HOUSE SURGEONS.

|         |                                                                                            |          |                                                                                    |
|---------|--------------------------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------|
| 1871-2. | R. CORY<br>H. WILLIAMS<br>S. OSBORN<br>T. H. BONSER                                        | 1879-80. | D. S. DAVIES<br>R. J. WILLIAMSON<br>R. P. SMITH<br>C. E. SHEPPARD                  |
| 1872-3. | E. SERGEANT<br>W. GARTON<br>A. H. LAVER<br>G. CLEGHORN                                     | 1880-1.  | J. R. LUNN<br>C. A. BALLANCE<br>H. P. BUTLER<br>A. B. CARPENTER                    |
| 1873-4. | I. BOULGER<br>E. WELCHMAN<br>A. V. MAYBURY<br>H. W. VERDON                                 | 1881-2.  | T. D. ACLAND<br>F. W. MARLOW<br>M. P. M. COLLIER<br>E. F. WHITE                    |
| 1874-5. | J. CROSSMAN<br>G. M. TAYLOR<br>G. F. ROSSITER<br>J. W. CLARKSON                            | 1882-3.  | W. A. DUNCAN<br>C. W. HAIG BROWN<br>H. M. MILTON<br>A. E. WELLS                    |
| 1875-6. | H. P. POTTER<br>H. H. CLUTTON<br>C. H. NEWBY<br>R. MAPLES                                  | 1883-4.  | W. WANSBROUGH JONES<br>G. F. COOPER<br>F. F. CAIGER<br>G. D. JOHNSTON              |
| 1876-7. | B. PITTS<br>R. MAPLES<br>C. C. SMITH<br>W. EDMUNDS                                         | 1884-5.  | J. ORFORD<br>H. B. ROBINSON<br>W. HULL<br>C. D. GREEN                              |
| 1877-8. | J. F. NICHOLSON<br>J. BLACK<br>F. H. WEEKES<br>W. H. BATTLE                                | 1885-6.  | R. LAWSON<br>B. RELTON<br>F. D. CROWDY<br>H. CAMERON KIDD                          |
| 1878-9. | G. H. MAKINS<br>G. H. D. GIMLETTE<br>H. U. SMITH<br>W. F. HASLAM<br>K. TAKAKI<br>H. CASTLE | 1886-7.  | E. S. GOODDY<br>F. E. NICHOL<br>E. D. RITCHIE<br>J. S. HUTTON<br>W. H. C. STAVELEY |

HOUSE SURGEONS—*continued.*

|          |                                                                                                                                      |         |                                                                                                                                     |
|----------|--------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------|
| 1887-8.  | S. H. JONES<br>J. H. TONKING<br>E. C. STABB<br>L. A. BIDWELL                                                                         | 1892-3. | A. BANKS<br>H. BURDEN<br>J. H. FISHER<br>P. J. ATKEY<br>W. P. PURVIS<br>R. R. LAW<br>W. G. SUTCLIFFE<br>W. L. WAINWRIGHT            |
| 1888-9.  | W. F. BROOK<br>F. FAWSETT<br>W. W. ORD<br>J. T. CALVERT<br>F. C. ABBOTT<br>R. V. SOLLY<br>C. H. JAMES<br>C. BROWN                    | 1893-4. | C. S. WALLACE<br>E. SMITH<br>W. REDPATH<br>C. PLANCK<br>S. W. F. RICHARDSON<br>E. M. HAINWORTH<br>A. R. O. MILTON<br>G. W. THOMPSON |
| 1889-90. | H. G. TURNEY<br>A. N. BOYCOTT<br>H. H. HUBERT<br>F. R. S. MILTON<br>T. W. LAMBERT<br>T. P. COWEN<br>G. E. ANSON<br>H. GERVIS         | 1894-5. | H. A. DICKSON<br>L. J. MISKIN<br>A. W. CUFF<br>W. J. C. MERRY<br>G. J. ARNOLD<br>R. FOX SYMONS<br>A. E. RUSSELL<br>W. H. HARDING    |
| 1890-1.  | A. F. STABB<br>A. C. LANKESTER<br>H. W. NIX<br>E. F. WARE<br>S. G. TOLLER<br>W. S. GRIFFITH<br>W. G. G. STOKES<br>L. A. J. ROUILLARD | 1895-6. | E. O. THURSTON<br>A. L. HOME<br>W. G. STONE<br>H. J. DAVIS<br>L. A. R. WALLACE<br>H. C. CROUCH<br>J. L. PRAIN<br>G. J. CONEORD      |
| 1891-2.  | L. COBBET<br>T. H. HAYDON<br>J. R. HARPER<br>C. WYMAN<br>T. H. KELLOCK<br>C. R. BOX<br>W. F. E. MILTON<br>T. A. M. FORDE             |         |                                                                                                                                     |

## ASSISTANT HOUSE PHYSICIANS.

|          |                                                                                                              |         |                                                                                                                                     |
|----------|--------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------|
| 1877-8.  | W. TYRRELL<br>R. B. BOTHAMLEY<br>W. H. BATTLE<br>E. H. HARE                                                  | 1880-1. | G. S. HATTON<br>F. R. WALTERS<br>C. B. RICHARDSON<br>H. SWALE<br>J. B. LAWFORD                                                      |
| 1878-9.  | S. A. CRICK<br>J. H. BATTYE<br>K. TAKAKI<br>W. W. GROOME<br>W. B. HADDEN<br>W. F. HASLAM<br>R. C. BENNINGTON | 1881-2. | C. A. BALANCE<br>M. P. M. COLLIER<br>A. B. CARPENTER<br>H. N. HOLBERTON<br>S. W. SUTTON<br>A. E. WELLS<br>F. W. MARLOW<br>R. HEELIS |
| 1879-80. | R. P. SMITH<br>D. S. DAVIES<br>J. SHAW<br>A. NEWSHOLME<br>J. R. LUNN<br>R. J. WILLIAMSON                     | 1882-3. | F. E. MARSTON<br>G. F. COOPER<br>C. W. HAIG-BROWN<br>H. M. N. MILTON<br>W. FELL<br>W. J. SHEPPARD                                   |
| 1880-1.  | J. R. LUNN<br>T. D. SAVILL                                                                                   |         |                                                                                                                                     |

ASSISTANT HOUSE PHYSICIANS *continued.*

|         |                                                                               |          |                                                                      |
|---------|-------------------------------------------------------------------------------|----------|----------------------------------------------------------------------|
| 1883-4. | W. HULL<br>F. F. CAIGER<br>C. D. GREEN<br>W. B. TOMSON                        | 1886-7.  | C. S. EVANS<br>H. CAMERON KIDD<br>W. H. C. STAVELEY<br>H. P. HAWKINS |
| 1884-5. | T. SCUTT<br>Y. SANUYOSHI<br>R. LAWSON<br>H. W. G. MACKENZIE<br>R. M. WILLIAMS | 1887-8.  | H. A. SANSON<br>H. T. BULSTEDE<br>S. B. COOK                         |
| 1885-6. | J. R. STADDON<br>E. D. RITCHIE<br>E. S. GOODDY<br>A. E. GODFREY               | 1888-9.  | H. B. SEDDON<br>G. R. ANDERSON                                       |
|         |                                                                               | 1889-90. | W. B. DE JERSEY<br>T. H. DICKSON                                     |

## ASSISTANT HOUSE SURGEONS.

|          |                                                                                                               |          |                                                                                                                                   |
|----------|---------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------|
| 1877-8.  | E. L. G. GAMBLE<br>G. H. D. GIMLETTE                                                                          | 1887-8.  | L. A. BIDWELL<br>W. F. BROOK<br>J. T. CALVERT<br>W. W. ORD<br>F. FAWSETT<br>E. SOLLY<br>C. BROWN<br>R. V. SOLLY                   |
| 1878-9.  | W. F. HASLAM<br>H. CASTLE<br>R. P. SMITH<br>D. S. DAVIES                                                      | 1888-9.  | C. H. JAMES<br>C. W. COOKE<br>S. B. COOK<br>E. HOBHOUSE<br>H. DUNCAN<br>F. C. ABBOTT<br>A. N. BOYCOTT<br>H. H. HULBERT            |
| 1879-80. | R. J. WILLIAMSON<br>C. A. BALLANCE<br>A. NEWSHOLME<br>J. R. LUNN                                              | 1889-90. | F. R. S. MILTON<br>H. C. BRISTOWE<br>G. E. ANSON<br>H. GERVIS<br>T. P. COWEN<br>A. F. STABB<br>A. C. LANKESTER<br>J. H. DEWHURST  |
| 1880-1.  | F. R. WALTERS<br>C. B. RICHARDSON<br>M. P. M. COLLIER<br>H. SWALE                                             | 1890-1.  | H. W. NIX<br>E. E. WARE<br>S. G. TOLLER<br>W. G. G. STOKES<br>D. F. SHEARER<br>L. A. J. ROUILLARD<br>T. H. HAYDON<br>J. R. HARPER |
| 1881-2.  | S. W. SUTTON<br>A. E. WELLS<br>E. F. WHITE<br>C. W. HAIG-BROWN                                                | 1891-2.  | L. CORBETT<br>C. WYMAN<br>W. F. E. MILTON<br>T. A. M. FORDE<br>T. H. KELLOCK<br>C. R. BOX<br>H. BURDEN<br>P. J. ATKEY             |
| 1882-3.  | H. M. N. MILTON<br>W. FELL<br>G. F. COOPER<br>W. HULL                                                         |          |                                                                                                                                   |
| 1883-4.  | W. WANSBROUGH JONES<br>G. D. JOHNSTON<br>F. F. CAIGER<br>W. J. SHEPPARD                                       |          |                                                                                                                                   |
| 1884-5.  | H. B. ROBINSON<br>C. D. GREEN<br>R. LAWSON<br>B. RELTON<br>Y. SANUYOSHI                                       |          |                                                                                                                                   |
| 1885-6.  | E. D. RITCHIE<br>F. D. CROWDY<br>H. CAMERON KIDD<br>E. S. GOODDY                                              |          |                                                                                                                                   |
| 1886-7.  | F. E. NICHOL<br>C. S. EVANS<br>W. H. C. STAVELEY<br>S. H. JONES<br>K. TOTSUKA<br>J. H. TONKING<br>E. C. STABB |          |                                                                                                                                   |

ASSISTANT HOUSE SURGEONS—*continued.*

|         |                                                                                                                                    |         |                                                                                                                                                       |
|---------|------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1892-3. | A. BANKS<br>J. H. FISHER<br>R. R. LAW<br>W. G. SUTCLIFFE<br>W. P. PURVIS<br>W. L. WAINWRIGHT<br>C. S. WALLACE<br>E. SMITH          | 1894-5. | L. J. MISTY<br>A. W. CUFF<br>G. J. ARNOLD<br>R. FOX SYMONS<br>A. E. RUSSELL<br>H. W. HARDING<br>E. O. THURSTON<br>A. L. HOME                          |
| 1893-4. | W. REDFATH<br>C. PLANCK<br>E. M. HAINWORTH<br>A. R. O. MILTON<br>S. W. F. RICHARDSON<br>R. W. ORD<br>J. W. HEWETT<br>H. A. DICKSON | 1895-6. | W. G. STONE<br>H. J. DAVIS<br>L. A. R. WALLACE<br>H. C. CROUCH<br>J. L. PRAIN<br>G. J. CONFORD<br>E. DYBALL<br>P. W. KENT<br>J. SMITH<br>W. D. FRAZER |

## RESIDENT ACCOUCHEURS.

|          |                                                                      |          |                                                                   |
|----------|----------------------------------------------------------------------|----------|-------------------------------------------------------------------|
| 1871-2.  | G. C. FRANKLIN.<br>B. ADDY<br>W. GARTON                              | 1881-2.  | W. F. HASLAM<br>H. P. BUTLER<br>W. A. DUNCAN<br>T. D. AGLAND      |
| 1872-3.  | J. S. SLATER<br>M. H. C. PALMER<br>E. SERGEANT<br>L. WILLIAMS        | 1882-3.  | A. E. WELLS<br>G. F. COOPER<br>S. W. SUTTON<br>T. D. SAVILL       |
| 1873-4.  | G. M. WHITEHEAD<br>C. H. NEWBY<br>I. BOULGER<br>E. H. DAVIS          | 1883-4.  | F. E. CAIGER<br>W. FELL<br>W. J. SHEPPARD<br>W. WANSBROUGH JONES  |
| 1874-5.  | H. S. BENNETT<br>C. M. TAYLOR                                        | 1884-5.  | J. ORFORD<br>W. HULL<br>C. D. GREEN<br>G. D. JOHNSTON             |
| 1875-6.  | W. EDMUNDS<br>S. W. J. JOSEPH<br>G. F. ROSSITER<br>C. C. SMITH       | 1885-6.  | R. E. ROUSE<br>J. E. KERSHAW<br>H. H. LANKESTER<br>A. A. BROCKATT |
| 1876-7.  | W. MORGAN<br>T. MILMAN<br>B. PITTS<br>R. MAPLES                      | 1886-7.  | J. S. HUTTON<br>C. YEOMAN<br>A. E. GODFREY<br>H. J. MACEVOY       |
| 1877-8.  | C. H. H. CAMERON<br>G. H. D. GIMLETTE<br>C. H. WHITE<br>F. H. WEEKES | 1887-8.  | E. SOLLY<br>W. A. BOND<br>H. J. SMYTH<br>J. D. BALLANCE           |
| 1878-9.  | J. F. NICHOLSON<br>W. TYRRELL<br>F. M. SANDWITH<br>H. U. SMITH       | 1888-9.  | S. W. WHEATON<br>C. H. JAMES<br>H. B. LUARD<br>E. C. STARR        |
| 1879-80. | W. H. BATTLE<br>K. TAKAKI<br>C. E. SHEPPARD<br>C. A. BALLANCE        | 1889-90. | F. FAWSSETT<br>G. R. ANDERSON<br>G. E. ANSON<br>A. N. BOYCOTT     |
| 1880-1.  | H. CASTLE<br>A. NEWSHOLME<br>J. SHAW<br>J. R. LUNN                   | 1890-1.  | H. B. OSBURN<br>H. GERVIS<br>H. LOW<br>W. R. CARTER               |



### SENIOR OBSTETRIC HOUSE PHYSICIANS.

|         |                                                                  |         |                                                                    |
|---------|------------------------------------------------------------------|---------|--------------------------------------------------------------------|
| 1891-2. | J. R. HARPER<br>W. G. G. STOKES<br>W. F. UMNEY<br>A. BANKS       | 1893-4. | W. A. BOWRING<br>J. H. FISHER<br>R. F. CHANCE<br>T. W. HICKS       |
| 1892-3. | W. L. WAINWRIGHT<br>T. H. HAYDON<br>C. S. WALLACE<br>R. K. ELLIS | 1894-5. | C. S. JAFFE<br>P. C. FENWICK<br>E. G. E. ARNOLD<br>W. E. F. TINLEY |
|         | 1895-6.                                                          |         |                                                                    |
|         | S. W. F. RICHARDSON<br>G. CANDLER                                |         | E. A. SAUNDERS<br>G. G. GENGÉ                                      |

### SENIOR OBSTETRIC CLERKS.

|          |                        |         |                                                                 |
|----------|------------------------|---------|-----------------------------------------------------------------|
| 1889-90. | H. B. OSBURN<br>H. LOW | 1890-1. | W. G. G. STOKES<br>W. R. CARTER<br>J. R. HARPER<br>H. D. LEVICK |
|----------|------------------------|---------|-----------------------------------------------------------------|

### JUNIOR OBSTETRIC HOUSE PHYSICIANS.

|         |                                                             |         |                                                                            |
|---------|-------------------------------------------------------------|---------|----------------------------------------------------------------------------|
| 1891-2. | W. F. UMNEY<br>A. BANKS<br>W. L. WAINWRIGHT<br>T. H. HAYDON | 1893-4. | J. H. FISHER<br>R. F. CHANCE<br>T. W. HICKS<br>C. S. JAFFE                 |
| 1892-3. | C. LATTER<br>C. S. WALLACE<br>R. K. ELLIS<br>W. A. BOWRING  | 1894-5. | P. C. FENWICK<br>E. G. E. ARNOLD<br>W. E. F. TINLEY<br>S. W. F. RICHARDSON |
|         | 1895-6.                                                     |         |                                                                            |
|         | G. CANDLER<br>E. A. SAUNDERS                                |         | G. G. GENGÉ<br>C. W. GRANT WILSON.                                         |

### OPHTHALMIC HOUSE SURGEONS.

These appointments took the place of the "Clinical Assistants in the Eye Department."

|         |                                 |         |                                   |
|---------|---------------------------------|---------|-----------------------------------|
| 1890-1. | H. C. BRISTOWE<br>F. E. FORWARD | 1893-4. | J. F. RUDALL<br>J. H. FISHER      |
| 1891-2. | C. H. USHER<br>S. G. TOLLER     | 1894-5. | J. H. FISHER<br>H. G. TOOMES      |
| 1892-3. | J. FISHER<br>E. P. ISAACS       | 1895-6. | A. H. P. DAWNAY<br>E. A. SAUNDERS |

# SCHOLARSHIPS AND MEDALS.

## ENTRANCE SCIENCE SCHOLARS.

|          |                                     |          |                                   |
|----------|-------------------------------------|----------|-----------------------------------|
| 1875-6.  | H. A. H. FENTON<br>T. D. SAVILL     | 1886-7.  | C. P. LOVELL<br>M. C. CLUTTERBUCK |
| 1876-7.  | R. J. WILLIAMSON<br>H. N. HOLBERTON | 1887-8.  | J. E. HARRIS<br>W. B. WINSTON     |
| 1877-8.  | W. WANSBROUGH JONES<br>A. E. WELLS  | 1888-9.  | E. M. HAINSWORTH<br>E. SMITH      |
| 1878-9.  | W. HULL                             | 1889-90. | T. G. NICHOLSON<br>A. E. RUSSELL  |
| 1879-80. | R. M. WILLIAMS<br>B. RILTON         | 1890-1.  | P. J. DEAR<br>W. E. DIXON         |
| 1880-1.  | R. LAWSON<br>H. H. LANKESTER        |          | H. C. CROUCH                      |
| 1881-2.  | SYDNEY H. JONES<br>J. S. HUTTON     | 1891-2.  | A. H. STEWART<br>F. H. GERVIS     |
| 1882-3.  | H. DUNCAN<br>E. D. SHIRTLIFF        | 1892-3.  | A. W. SIKES<br>C. G. SELIGMANN    |
| 1883-4.  | C. W. COOKE<br>F. FAWSETT           | 1893-4.  | R. W. C. PIERCE<br>H. E. HEWITT   |
| 1884-5.  | F. C. ABBOTT<br>C. J. MARTIN        | 1894-5.  | J. GAFF<br>H. R. BEALE            |
| 1885-6.  | A. F. STABB<br>S. G. TOLLER         | 1895-6.  | F. B. SKERRETT<br>W. B. FRY       |

## UNIVERSITY SCHOLARS.

|         |             |         |                   |
|---------|-------------|---------|-------------------|
| 1894-5. | W. McDUGALL | 1895-6. | P. W. G. SARGENT. |
|---------|-------------|---------|-------------------|

## TITE SCHOLARS.

1875. Change made in mode of award.

|           |                     |          |                     |
|-----------|---------------------|----------|---------------------|
| 1861-2-3. | H. SUMMERHAYES      | 1883-4.  | F. FAWSETT          |
| 1864-5-8. | J. J. RIDGE         | 1884-5.  | F. C. ABBOTT        |
| 1867-8.   | H. MEADOWS          | 1885-6.  | A. F. STABB         |
| 1870-1-2. | I. BOULGER          | 1886-7.  | H. BURDEN           |
| 1873-4-5. | F. H. PECK          | 1887-8.  | J. H. FISHER        |
| 1875-6.   | T. D. SAVILL        | 1888-9.  | E. SMITH            |
| 1876-7.   | W. A. DUNCAN        | 1889-90. | S. W. F. RICHARDSON |
| 1877-8.   | W. WANSBROUGH JONES | 1890-1.  | K. J. PREVITE ORTON |
| 1878-9.   | F. H. FURNIVAL      | 1891-2.  | J. C. HARCOURT      |
| 1879-80.  | C. D. GREEN         | 1892-3.  | A. W. SIKES         |
| 1880-1.   | R. LAWSON           | 1893-4.  | H. E. HEWITT        |
| 1881-2.   | SYDNEY H. JONES     | 1894-5.  | J. GAFF             |
| 1882-3.   | H. P. HAWKINS       | 1895-6.  | C. F. SELOUS        |

## MUSGROVE SCHOLARS.

Founded, April, 1875.

|           |                   |            |                     |
|-----------|-------------------|------------|---------------------|
| 1875-6-7. | S. J. TAYLOR      | 1886-7-8.  | A. F. STABB         |
| 1877-8-9. | W. A. DUNCAN      | 1888-9-90. | J. H. FISHER        |
| 1880-1-2. | W. B. TOMSON      | 1890-1-2.  | S. W. F. RICHARDSON |
| 1882-3-4. | S. H. JONES } æq. | 1892-3-4.  | M. TAKAYASU         |
|           | K. TOTSUKA }      | 1894-5-6.  | H. E. HEWITT.       |
| 1884-5-6. | F. FAWSETT        |            |                     |

## PEACOCK SCHOLARS.

1883-4-5. H. P. HAWLINS  
 1885-6-7. F. C. ABBOTT  
 1887-8-9. C. P. LOVELL  
 1889-90-1. C. PLANCK

1891-2-3. G. G. GENGE  
 1893-4-5. A. W. SIKES  
 1895-6. J. GAFF.

## CHESELDEN MEDALLISTS.

1850-1. F. J. MONEY  
 1851-2. H. LANKESTER  
           T. B. CROSBY (bronze medal)  
 1852-3. J. E. MORETON  
 1853-4. W. N. CHIPPERFIELD  
 1854-5. W. M. ORD  
 1855-6. J. W. COUSINS  
 1856-7. C. F. GEORGE  
 1857-8. E. WOAKES  
 1858-9. C. H. DRAKE  
 1859-60. T. DRAKE  
 1860-1. J. W. HICKS  
 1861-2. J. F. DECK  
 1862-3. C. A. GREAVES  
 1863-4. W. W. WAGSTAFFE  
 1864-5. F. H. WARD  
 1865-6. W. W. INGLIS  
 1866-7. W. ANDERSON  
 1867-8. F. POLLARD  
 1868-9. L. M. THOMAS  
 1869-70. E. SERGEANT  
 1870-1. J. H. BONSER  
 1871-2. A. H. LAVER  
 1872-3. G. F. ROSSITER

1873-4. H. P. POTTER  
 1874-5. J. F. NICHOLSON  
 1875-6. —————  
 1876-7. H. U. SMITH  
 1877-8. W. F. HASLAM  
 1878-9. K. TAKAKI  
 1879-80. W. A. DUNCAN  
 1880-1. C. W. HAIG-BROWN  
 1881-2. —————  
 1882-3. G. D. JOHNSTON  
 1883-4. R. LAWSON  
 1884-5. S. H. JONES  
 1885-6. J. H. TONKING  
 1886-7. F. FAWSETT  
 1887-8. F. C. ABBOTT  
 1888-9. A. C. LANKESTER  
 1889-90. T. H. KELLOCK  
 1890-1. A. BANKS  
 1891-2. W. G. SUTCLIFFE  
 1892-3. S. W. F. RICHARDSON  
 1893-4. E. O. THURSTON  
 1894-5. B. DYBALL  
           A. J. MARTINEAU  
                                   (Bronze Medal)  
 1895-6. J. P. SCATCHARD.

## NEWMAN SMITH PRIZE (MEAD).

1850. J. W. KLYWORTH  
 1853. J. E. MORETON  
 1854. E. CLAPTON

1855. W. H. STONE  
 1858. E. WOAKES  
 1859. J. HILDITCH

## MEAD MEDALLISTS.

In lieu of the Newman Smith Prize from December, 1874.

1874-5. J. F. NICHOLSON  
 1875-6. —————  
 1876-7. G. B. LONGSTAFF  
 1877-8. S. J. TAYLOR  
 1878-9. T. D. ACLAND  
 1879-80. C. F. CONWELL  
 1880-1. W. WANSBROUGH JONES  
 1881-2. W. HULL  
 1882-3. F. F. CAIGER  
 1883-4. H. W. G. MACKENZIE  
 1884-5. F. D. CROWDY  
 1885-6. S. W. WHEATON

1885-6. H. J. MACEVOY (Bronze Medal)  
 1886-7. W. W. ORD  
 1887-8. H. G. TURNER  
 1888-9. S. G. TOLLER  
 1889-90. W. W. STABB  
 1890-1. C. LATTER  
 1891-2. A. R. O. MILTON  
 1892-3. E. A. SAUNDERS  
 1893-4. G. G. GENGE  
 1894-5. F. B. THORNTON  
 1895-6. A. W. SIKES.

### TREASURER'S GOLD MEDALLISTS.

|          |                                 |          |                     |
|----------|---------------------------------|----------|---------------------|
| 1846-7.  | H. D. BENWELL                   | 1870-1.  | B. ADDY             |
| 1847-8.  | J. S. BRISTOWE                  | 1871-2.  | A. V. MAYBURY       |
| 1848-9.  | L. W. SEDGWICK                  | 1872-3.  | G. F. ROSSITER      |
| 1849-50. | A. CARPENTER                    | 1873-4.  | H. C. SANDFORD      |
| 1850-1.  | F. J. MONEY (Gold Medal)        | 1874-5.  | J. F. NICHOLSON     |
|          | C. W. CHALDECOTT (Silver Medal) | 1875-6.  |                     |
| 1851-2.  | H. LANKESTER                    | 1876-7.  | C. E. SHEPPARD      |
| 1852-3.  | J. E. MORITON                   | 1877-8.  | S. J. TAYLOR        |
| 1853-4.  | W. N. CHITPERFIELD              | 1878-9.  | K. TAKAKI           |
| 1854-5.  | W. M. ORD                       | 1879-80. | W. A. DUNCAN        |
| 1855-6.  | W. H. STONE                     | 1880-1.  | W. WANSBROUGH JONES |
| 1856-7.  | J. WILLIAMS                     | 1881-2.  | W. J. SHEPPARD      |
| 1857-8.  | H. GERVIS                       | 1882-3.  | W. B. TOMSON        |
| 1858-9.  | C. H. DRAKE                     | 1883-4.  | R. LAWSON           |
| 1859-60. | T. DRAKE                        | 1884-5.  | S. H. JONES         |
| 1860-1.  | J. W. HICKS                     | 1885-6.  | H. J. SMYTH         |
| 1861-2.  | J. F. DECK                      | 1886-7.  | F. FAWSETT          |
| 1862-3.  | H. SUMMERHAYES                  | 1887-8.  | F. C. ABBOTT        |
| 1863-4.  | W. W. WAGSTAFFE                 | 1888-9.  | A. F. STABB         |
| 1864-5.  | F. H. WARD                      | 1889-90. | A. KING             |
| 1865-6.  | A. WALLER                       | 1890-1.  | J. H. FISHER        |
| 1866-7.  | N. C. DOBSON                    | 1891-2.  | E. SMITH            |
| 1867-8.  | J. J. RIDGE                     | 1892-3.  | S. W. F. RICHARDSON |
| 1868-9.  | H. W. SAUNDERS                  | 1893-4.  | G. G. GENGE         |
| 1869-70. | J. S. SLATER                    | 1894-5.  | A. J. MARTINEAU     |
|          |                                 | 1895-6.  | J. P. SCATCHARD     |

### SOLLY MEDALLISTS.

Founded, 1873.

|       |                     |       |               |
|-------|---------------------|-------|---------------|
| 1877. | W. H. BATTLE        | 1886. | E. SOLLY      |
|       | C. W. DE LACY EVANS | 1888. | C. H. JAMES   |
| 1878. | C. E. SHEPPARD      | 1890. | C. WYMAN      |
| 1880. | C. A. BALLANCE      | 1892. | W. B. WINSTON |
| 1882. | W. A. DUNCAN        | 1894. | M. A. TEALE   |
| 1884. | J. PIETERSEN        | 1896. | E. H. T. NASH |

### GRAINGER TESTIMONIAL PRIZEMEN.

|         |              |         |                   |
|---------|--------------|---------|-------------------|
| 1866.   | J. J. RIDGE  | 1882-3. | C. S. SHERRINGTON |
| 1874-5. | H. P. POTTER | 1886-7. | F. G. PARSONS     |
| 1878-9. | W. A. DUNCAN | 1893-4. | A. S. F. GRÜNBAUM |

### BRISTOWE MEDALLISTS.

|         |            |         |               |
|---------|------------|---------|---------------|
| 1894-5. | A. L. HOME | 1895-6. | E. L. COLLIS. |
|---------|------------|---------|---------------|

### THE SALTERS' COMPANY RESEARCH FELLOW.

1895. C. S. JAFFE.

### BEANEY SCHOLAR.

1896. B. DYBALL.



# LOCAL LIST OF OLD STUDENTS OF ST. THOMAS'S HOSPITAL.

## ENGLAND AND WALES.

*(Excluding the London District.)*

- ABBOTS-BROMLEY, STAFF.—  
     N. J. Newbould.  
 ABBOTSBURY, DORSET.—  
     W. Hawkins.  
 ABERDARE, GLAMORG.—  
     E. Jones, E. J. T. Jones.  
 ABERYSTWITH, CARD.—  
     T. P. Beddoes.  
 AINTREE, LANC.—  
     E. S. Sugden.  
 ALDERNEY, CHANNEL ISLANDS.—  
     E. W. Livesey.  
 ALFORD, LINC.—  
     A. E. Odling.  
 AMESBURY, WILTS.—  
     J. D. Gimlette.  
 ALNWICK, NTHLD.—  
     R. B. Robson.  
 ASHBY-DE-LA-ZOUCH, LEIC.—  
     R. R. W. Logan.  
 AUDLEM, CHESH.—  
     H. Greaves.  
 AUGHTON, YORKS.—  
     W. Garton.  
 AYLESTONE, LEIC.—  
     E. H. Snoad.  
 AYLSHAM, NORFOLK.—  
     P. C. Shepherd.  
 BAGSHOT, SURREY.—  
     H. B. Osburn.  
 BAKEWELL, DERBY.—  
     E. B. Wrench, E. M. Wrench.  
 BAMBER BRIDGE, LANC.—  
     J. Bibby.  
 BANBURY, OXFORD.—  
     R. Rygate.  
 BARKING, ESSEX.—  
     A. A. Rostant, E. Swindells.  
 BARNSTAPLE, DEVON.—  
     J. R. Harper, T. Johnston.  
 BARTON-UPON-HUMBER, LINC.—  
     W. H. Sissons.  
 BASCHURCH, SALOP.—  
     E. H. O. Sankey.  
 BASLOW, DERBYSHIRE.—  
     E. M. Wrench.  
 BATH, SOMERSET.—  
     A. L. Fuller, W. N. Heygate,  
     J. Jarvis, P. King.  
 BATLEY, YORKS.—  
     J. Russell.  
 BAWTRY, YORKS.—  
     W. F. Ward.  
 BECCLES, SUFFOLK.—  
     H. P. Helsham.  
 BECKENHAM, KENT.—  
     E. Carpenter, G. R. F. Stilwell,  
     F. Todd, E. S. Whelpton.  
 BEDFORD.—  
     C. G. Johnson, W. G. Johnson,  
     A. S. Phillips, J. Raby, W. Stokes  
     (retired), W. C. H. Wroughton.  
 BENENDEN, KENT.—  
     J. C. R. Richardson.  
 BEXHILL, SUSSEX.—  
     J. Rew.  
 BICESTER, OXON.—  
     A. W. Jones.  
 BIRKENHEAD, CHESHIRE.—  
     H. L. Pearson.  
 BIRMINGHAM, WARWICK.—  
     J. D. Ballance, H. R. Bracey, A.  
     Foxwell, W. F. Haslam, A. Price,  
     F. B. G. Stableford.  
 BISHOP'S STORTFORD, HERTS.—  
     H. Gervis, J. E. Morris.  
 BISHOP'S WALTHAM, HANTS.—  
     L. L. Jenner.  
 BLACKROD, LANC.—  
     H. Smith.  
 BLACKWATER, HANTS.—  
     E. D. Ritchie.  
 BLAGDON, SOMERS.—  
     T. O. Halliwell.  
 BOGNOR, SUSSEX.—  
     L. N. Pentreath.  
 BOOTLE, LANC.—  
     R. J. Sprakeling.  
 BOROUGHBRIDGE, YORKS.—  
     H. R. Sedgwick, J. Sedgwick.  
 BORROWASH, DERBYSHIRE.—  
     J. A. Hunt.  
 BORSTAL, KENT.—  
     O. F. N. Treadwell.  
 BOSTON, LINC.—  
     F. Snaith, R. E. E. South.  
 BOTESDALE, SUFFOLK.—  
     A. W. Pearse.  
 BOTLEY, HANTS.—  
     A. Pern. E. C. Pern.

- BOURNEMOUTH, HANTS.—  
T. W. Blake, H. K. Hitchcock,  
W. H. L. Marriner, W. S. Tebb,  
G. E. Weary, G. F. Worthington.
- BRACKNELL, BERKS.—  
H. Parson.
- BRADFORD, YORKS.—  
S. Lodge.
- BRADFORD-UPON-AVON, WILTS.—  
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Wherry, E. Whichello.
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     A. C. Wallace.  
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     J. Morton, J. Terry.  
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     H. Walker, H. Williams.  
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     T. Moreton.  
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     F. G. Layton.  
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     J. D. Phillips.  
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     F. Nicholson, W. C. Rockcliffe, H. G.  
     Waters, A. Wilson.  
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     H. Gorst.  
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     A. F. Stabb.  
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     F. A. Griffiths.  
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     Haward, F. W. Mason, J. R. Staddon,  
     W. J. Staddon, E. P. Wrinch.  
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     C. C. Heywood.  
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     Sullivan.  
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     R. J. Bedford.



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     E. Chaffers.  
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     J. F. Mackreth.  
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     R. Maples.  
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     G. A. Shackel.  
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L. Maybury, R. W. Middleton,  
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Way, J. H. F. Way, J. P. Way.
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## RUGBY, WARW.—

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A. Papillon.

## ST. NEOTS, HUNTS.—

E. J. Cross.

## SALISBURY, WILTS.—

W. W. Ord.

## SANDOWN, I.W.—

W. H. Smith.

## SCARBOROUGH, YORKS.—

P. Northcote, G. W. Thompson.

## SEATON, DEVON.—

G. Porter.

## SENNY BRIDGE, BRECON.—

J. P. Jeffreys-Powell.

## SETTLE, YORKS.—

H. B. Shepherd.

## SEVENOAKS, KENT.—

A. J. Alliot, T. Marsden, W. W.  
Wagstaffe.

## SHEEN, DERBY.—

A. T. Bury.

## SHEFFIELD, YORKS.—

E. J. Adams, W. W. Banham,  
C. E. Combe, A. W. Cuff, W.  
Dales, O. H. Hudson, A. H. Laver,  
H. T. Wightman.

## SHEFFORD, BEDS.—

C. W. Cannock.

## SHERE, SURREY.—

I. R. Cory.

## SHIRLEY, HANTS.—

G. H. Weston.

## SHOREHAM, SUSSEX.—

C. M. Kempe.

## SHOTTISHAM, SUFF.—

V. Edwards (retired).

## SHREWSBURY, SALOP.—

L. E. G. De Woolfson, W. H.  
Wigham.

## SIDCUP, KENT.—

G. W. Davis, H. J. Frederick,  
R. R. Law.

## SIDLESHAM, SUSSEX.—

J. E. F. André.

## SIDMOUTH, DEVON.—

L. L. B. Williams.

## SKETTY, GLAMORG.—

A. L. Perkins.

## SLOUGH, BUCKS.—

R. S. Charsley, H. Fraser.

## SOLIHULL, WARW.—

A. V. Bernays.

## SOUTHAMPTON.—

R. F. Chance, G. H. Dodd, J. R.  
Keele, W. P. Purvis, R. W. F. Welch.

## SOUTHBOROUGH, KENT.—

D. W. H. Llewellyn.

## SOUTH MOLTON, DEVON.—

H. J. Smyth.

## SOUTHPORT, LANC.—

B. Addy, G. R. Anderson, A. E.  
Cox, H. Winterbottom.

## SPALDING, LINC.—

W. L. Byham, W. P. Hilliam, H.  
T. Stiles.

## SPONDON, DERBYSH.—

R. A. Bayliss.

## SPRING GROVE, MIDDLEX.—

T. W. Bullock.

## STAFFORD.—

J. H. Croudace, R. Hughes.

## STAINDROP, DURH.—

G. E. Vivian.

## STAINES, MIDDLESEX.—

G. B. C. Blount, T. H. Scutt.

## STAMFORD, LINC.—

W. D. Eddowes.

## STANDISH, LANC.—

J. B. Stuart.

## STANNINGLEY, YORKS.—

C. R. Salisbury.

## STECHFORD, WORC.—

J. H. Pugh.

- STEYNING, SUSSEX.—  
     C. M. Lewis.  
 STOCK, ESSEX.—  
     A. Clarke.  
 STOCKLAND, DEVON.—  
     W. S. Black.  
 STOCKPORT, CHES.—  
     J. S. Revely.  
 STOCKTON-ON-TEES, DUR.—  
     T. H. Godfrey.  
 STOKE-UPON-TRENT.—  
     H. Faulds.  
 STONE, STAFF.—  
     H. Hartley.  
 STONEYCROFT, LANC.—  
     G. R. W. Parker.  
 STROUD, GLOUC.—  
     A. W. Waller.  
 STURMINSTER-NEWTON, DORSET.—  
     J. Tarzwell (retired).  
 SUNDERLAND, DUR.—  
     W. Biggam, T. C. Squance.  
 SURBITON, SURREY.—  
     R. Ackerley, F. P. Atkinson, W.  
     A. Bowring, T. G. Brodie, W. W.  
     Groome, A. C. Thornton.  
 SWANSEA, GLAMORG.—  
     W. F. Brook, A. D. Davidson,  
     W. Morgan.  
 SWINDON, WILTS.—  
     W. Howse, A. C. Swinhoe, G. R.  
     Swinhoe, L. V. Tebbs.  
 SWINTON, LANC.—  
     J. Williams.  
 TARVIN, CHES.—  
     J. E. Moreton, T. W. E. Moreton.  
 TATTENHALL, CHESH.—  
     H. Whichello.  
 TAUNTON, SOMERS.—  
     C. E. Abbott, S. Farrant, A. R. Iles,  
     H. T. Rutherford, R. H. West.  
 TEDDINGTON, MIDDLEX.—  
     J. P. Topping.  
 TEIGNMOUTH, DEVON.—  
     S. H. R. Davies, A. Harrison,  
     F. C. H. Piggott.  
 TENBURY, WORC.—  
     A. Haines, J. L. Sweet.  
 TETTENHALL, STAFF.—  
     J. Cooke.  
 TEWKESBURY, GLOUC.—  
     P. L. Moore.  
 THAME, OXFORD.—  
     R. A. F. Gurney.  
 THORNCOMBE, DORSET.—  
     C. A. Morgan.  
 THORNTON, YORKS.—  
     C. Yeoman.  
 THRAPSTONE, NORTHANTS.—  
     T. W. Buckley.  
 TICEHURST, SUSSEX.—  
     A. S. L. Newington, T. Newington.  
 TICKHILL, YORKS.—  
     G. G. Phillips.  
 TIVERTON, DEVON.—  
     G. F. Welsford.  
 TOLLERTON, YORKS.—  
     W. C. Ellis.  
 TON PENTRE, GLAMORG.—  
     W. Stokes.  
 TORQUAY, DEVON.—  
     T. D. Cook, F. D. Crowdy, S.  
     Grose, W. W. Stabb, G. A. F.  
     Wilks (retired).  
 TOTTENHAM, MIDDLESEX.—  
     A. S. R. Wainwright.  
 TREDEGAR, MON.—  
     T. G. Anthony.  
 TRING, HERTS.—  
     H. P. Gilbert, E. Pope (retired),  
     R. B. Williams.  
 TROEDYRHIW, GLAMORG.—  
     C. M. Jones.  
 TUDDENHAM, SUFF.—  
     Rev. H. F. Banham.  
 TUNBRIDGE WELLS, KENT.—  
     P. C. Low.  
 TWICKENHAM, MIDDLESEX.—  
     J. R. Leeson.  
 UCKFIELD, SUSSEX.—  
     G. Lucas.  
 ULCEBY, LINCS.—  
     T. Baron.  
 UXBRIDGE, MIDDLESEX.—  
     A. Charpentier.  
 VENTNOR, I.W.—  
     J. L. WHITEHEAD.  
 WAINFLEET, LINC.—  
     G. H. Doudney.  
 WAKEFIELD, YORKS.—  
     S. Holdsworth.  
 WALKERINHAM, NOTTS.—  
     W. W. C. Robson.  
 WALLINGFORD, BERKS.—  
     E. C. Walter.  
 WALTHAM CROSS, HERTS.  
     W. S. Mavor.  
 WAREHAM, DORSET.—  
     H. J. Clark.  
 WARWICK.—  
     W. R. Carter.  
 WATFORD, HERTS.—  
     A. E. Cox.  
 WATTON, HERTS.—  
     H. B. Hodges, H. C. Hodges.  
 WELLINGTON COLLEGE, BERKS.—  
     H. G. Armstrong.  
 WELLS, SOMERS.—  
     M. H. Laslett.  
 WELSH NEWTON, HEREFORD.—  
     T. J. Jones.



WELSHPOOL, MONTG.—  
F. E. Marston, T. Sowerby.  
WEST HARTLEPOOL, DURHAM.—  
E. H. Davis.  
WESTBURY, WILTS.—  
W. H. Reed.  
WESTON, SOMERS.—  
W. H. Smith.  
WESTON-SUPER-MARE, SOMERS.—  
W. H. G. Phelps, G. F. Rossiter.  
WEYBRIDGE, SURREY.—  
J. J. Powell, H. S. Willson.  
WHITBY, YORKS.—  
C. F. Burton, W. E. F. Tinley.  
WHITCHURCH, DEVON.—  
J. H. Sims.  
WHITSTABLE, KENT.—  
C. Etheridge.  
WHITTINGTON, DERBY.—  
A. M. Palmer.  
WHITTLESEA, CAMBS.—  
J. H. Webster.  
WICKHAM MARKET, SUFF.—  
A. B. How.  
WICKWAR, GLOUC.—  
G. J. Arnold.  
WIGAN, LANC.—  
J. B. Stuart.  
WIMBLEDON, SURREY.—  
S. R. Collier, S. G. Shattock, J. W.  
Winterburn.  
WINCANTON, SOMERS.—  
E. Deane, A. W. F. Sayres.  
WINCHESTER, HANTS.—  
T. Drake, W. E. Drake, G. F. A.  
England.  
WINDSOR, BERKS.—  
C. J. Wilkinson.  
WINTERTON, LINC.—  
Rev. J. T. Fowler.  
WISBECH, CAMB.—  
A. V. Peatling.  
WISBOROUGH GREEN, SUSSEX.—  
F. N. Heygate.  
WITHAM, ESSEX.—  
G. W. Grabham.  
WITHERIDGE, DEVON.—  
C. H. Stewart.  
WOKING, SURREY.—  
H. Knight, H. H. Lankester.  
WOLSINGHAM, DUR.—  
K. B. J. Vickers.  
WOLSTON, WARW.—  
A. Purkiss.  
WOLVERHAMPTON, STAFF.—  
F. Edge, J. W. Scott.  
WOODFORD, ESSEX.—  
B. Gordon, J. C. Harcourt.

WOODHALL SPA, LINC.—  
C. J. Williams.  
WOOTTON-BASSETT, WILTS.—  
A. P. Petman.  
WORCESTER PARK, SURREY.—  
H. J. Carstairs.  
WORKSOP, NOTTS.—  
A. J. H. Montague.  
WREXHAM, DENBIGH.—  
H. V. Palin.  
WRINGTON, SOMERSET.—  
H. C. Bristowe.  
YALDING, KENT.—  
E. J. Wood.  
YARMOUTH, NORF.—  
H. Collier.  
YEADON, YORKS.—  
T. S. Usher.  
YEALAND CONYERS, LANC.—  
Rev. J. Mitchell.  
YORK.—  
W. A. Evelyn, C. Hodgson, N. L.  
Hood, A. W. Metcalfe, F. H.  
Weekes.

## SCOTLAND.

ABERDEEN.—  
R. W. Reid, C. H. Usher.  
DUMFRIES.—  
W. D. Grieve.  
EDINBURGH.—  
T. W. Drinkwater, W. S.  
Greenfield, G. C. Purvis.  
GLASGOW.—  
R. D. MacGregor, D. Sinclair.  
POLMONT, STIRLING.—  
T. H. Lawrie.  
STRANRAER, WIGTOWN.—  
T. Easton.

## IRELAND.

BAGNALSTOWN, CARLOW.—  
J. J. Norton.  
BELFAST.—  
W. Calwell, R. C. McCullagh.  
DOWNPATRICK, DOWN.—  
W. Ranson.  
DUNMURRY, ANTRIM.—  
D. P. Gaussen.  
KILLARNEY, KERRY.—  
G. Stoker.  
KNOCK, ANTRIM.—  
J. K. Kerr.  
LARNE, ANTRIM.—  
D. P. S. Hill.

# MEDICAL OFFICERS OF THE NAVAL, MILITARY, AND INDIAN SERVICES.

- ADDISON, C. J. Surg.-Maj. Army.  
 ALPIN, W. G. P. Surg.-Capt. I.M.S. Bengal.  
 AVETOOM, S. T. Surg.-Maj. I.M.S. Bombay.  
 BARKER, F. R. Surg.-Maj. Army.  
 BENT, G. Surg.-Capt. Army.  
 BOULGER, I. Surg.-Maj. Army.  
 BURDEN, H. Surg.-Lt. I.M.S. Bengal.  
 BUTTERWORTH, S. Surg.-Capt. Army.  
 CALVERT, J. T. Surg.-Capt. I.M.S. Bengal.  
 CAMERON, C. Surg.-Lt.-Col. I.M.S. Bengal. Retired.  
 CARR-WHITE, P. Surg.-Capt. I.M.S. Madras.  
 CHEVERS, H. L. G. Surg.-Capt. Army.  
 CLARKSON, F. C. Surg.-Capt. I.M.S. Bengal.  
 CLARKSON, J. W. Surg.-Capt. I.M.S. Bombay.  
 COAD, J. E. Surg. R.N.  
 COLMAN, G. M. H. Surg.-Maj. Army. Retired.  
 COOKSON, H. Surg.-Maj. I.M.S. Bengal. Retired.  
 COWEN, W. A. D. Surg.-Maj. Army.  
 DE LOM, H. A. Surg.-Capt. Army.  
 DEWES, F. J. Surg.-Capt. I.M.S. Madras.  
 DICKERSON, S. H. Brig.-Surg. Army. Retired.  
 DURANT, R. J. A. Surg.-Capt. Army.  
 DURSTON, J. C. Surg. R.N.  
 EARLE, H. E. L. Surg. R.N. Retired.  
 EYDE, J. S. Surg.-Capt. Army.  
 FAWSETT, R. Surg.-Lt. Army.  
 FISHER, J. Surg.-Lt. I.M.S. Bengal.  
 FLETCHER, W. B. Fleet-Surg. R.N. Retired.  
 FOOTNER, E. Brig.-Surg. Army. Retired.  
 FREEMAN, E. C. Surg.-Capt. Army.  
 GABBETT, P. C. Surg.-Capt. I.M.S. Madras.  
 GIMLETTE, G. H. D. Surg.-Maj. I.M.S. Bengal.  
 GIMLETTE, T. D. Fleet-Surg. R.N.  
 GRAY, C. Surg.-Maj. Army. Retired.  
 GROSE, S. Staff-Surg. R.N. Retired.  
 HAKIM, H. M. Surg.-Maj. I.M.S. Madras.  
 HALL, J. L. Surg.-Maj. Army.  
 HARRIS, F. A. Surg.-Maj. Army.  
 HEATHER, B. G. Surg. R.N.  
 HUNT, J. P. Surg.-Maj. Army.  
 HUSKINSON, H. Surg. R.N.  
 ILLINGWORTH, J. A. Brig.-Surg. Army. Retired.  
 JAMES, C. H. Surg.-Capt. I.M.S. Bengal.  
 JULIUS, H. A. Surg. R.N.  
 KING, A. F. W. I.M.S.  
 LANCASTER, J. Surg.-Lt.-Col. I.M.S. Madras.  
 LONDON, E. A.M.S.  
 LEWTAS, J. T. Surg.-Maj. I.M.S. Bengal.  
 LIGHTFOOT, W. S. Staff-Surg. R.N.  
 LUARD, H. B. Surg.-Capt. I.M.S. Bengal.  
 McDONNELL, J. O'M. Surg.-Lt.-Col. I.M.S. Bengal. Retired.  
 MANLEY, W. G. N., C.B., V.C. Surg.-Gen. Army. Retired.  
 MATURIN, B. A. Surg.-Capt. Army.  
 MICHAEL, H. J. Surg.-Maj. Army.  
 MOORE, H. M. Surg.-Lt. I.M.S. Bombay.  
 MOORES, S. G. Surg.-Capt. Army.  
 NAUTH, B. Surg.-Lt. I.M.S. Madras.  
 OWEN, C. W., C.I.E., C.M.G. Surg.-Maj. I.M.S. Bengal.  
 PINTO, J. O. Surg.-Capt. I.M.S. Madras.  
 POYNTER, G. F. Surg.-Maj. Army.  
 PRALL, C. B. Surg.-Lt. I.M.S. Bengal.  
 REILLY, C. C. Surg.-Capt. Army.  
 ROBINSON, G. W. Surg.-Maj. Army.  
 ROBINSON, S. C. B. Surg.-Maj. Army.  
 ROCK, C. H. Surg. R.N.  
 ROE, E. A. H. Surg.-Lt.-Col. Army. Retired.  
 RORIE, J. Dep.-Insp.-Gen. R.N. Retired.  
 SARKIES, S. C. Surg.-Maj. I.M.S. Madras.  
 SAUNDERS, H. Surg.-Maj. Army.  
 SINGH, B. J. Surg.-Capt. I.M.S. Bengal.  
 SKARDON, T. G. Brig.-Surg. I.M.S. Bengal. Retired.  
 SLAUGHTER, C. H. Insp.-Gen. R.N. Retired.  
 SLAUGHTER, W. B. Surg.-Lt.-Col. Army.  
 STADDON, H. E. Surg.-Lt. Army.  
 TODD, H. J. Mc C. Staff-Surg. R.N.  
 TREVOR, H. O. Surg.-Maj. Army.  
 WHISTON, P. H. Surg.-Capt. Army.  
 WILES, J. Dep.-Surg.-Gen. Army. Retired.  
 WILLIAMS, A. H. Surg.-Lt.-Col. I.M.S. Bengal.  
 WILLIS, C. F. Surg.-Maj. I.M.S. Bombay.  
 WOODHOUSE, T. P. Surg.-Maj. Army.  
 WRIGHT, E. H. Surg.-Capt. I.M.S. Madras.

# ALPHABETICAL LIST OF OLD STUDENTS OF ST. THOMAS'S HOSPITAL.

*(The date indicates the year of entry.)*

- ABBOTT, C. E. (1874). The Shrapnells, Taunton.
- ABBOTT, F. C. (1884). St. Thomas's Hospital. B.Sc., M.B., M.S. Lond., F.R.C.S.; Resident Assistant Surgeon.  
w 1884-5. 1st Year Student, 1st Entrance Science Scholarship, The Wm. Tite Scholarship.  
s 1885. 1st Year Student, 1st Coll. Prize.  
w 1885-6. 2nd Year Student, The Peacock Scholarship.  
w 1886-7. 3rd Year Student, 2nd tenure of Peacock Scholarship with 1st Coll. Prize.  
w 1887-8. 4th Year Student, The Cheselden Medal;  
Treasurer's Gold Medal.  
H.P., H.S., A.H.S., Demonstrator of Anatomy and Surgical Registrar.
- ABEL, H. M. (1888). House Surg., Peterborough Infirmary, Peterborough. B.A. Oxon.
- ACHARD, A. L. (1880). 9, Blandford St., Manchester Square. M.D. Brux.
- ACKERLEY, R. (1885). Croft House, The Hill, Surbiton, Surrey. M.A., M.B., B.Ch. Oxon.
- ACLAND, T. D. (1876). 74, Brook St., Grosvenor Square. M.A., M.D. Oxon.; F.R.C.P. Lond.; Physician, St. Thomas's Hospital; Physician, Brompton Hospital.  
w 1877-8. 3rd Year Physical Society's Prize. Paper published in Hospital Reports, Vol. VIII.  
w 1878-9. 4th Year Student, Mead Medal. Demonstr. of Pract. Med., Morb. Histol. and Pract. Physiol., H.S., H.P., R.A.
- ADAMS, E. J. (1863). Crow Tree House, Sheffield.
- ADAMS, W. (1840). 5, Henrietta Street, Cavendish Square. F.R.C.S.; Con. Surg. Gt. North. Cent. Hosp., Nat. Hosp. for Paral. and Epilep., and Nat. Orthop. Hosp.
- ADAMS, W. (1859). Fore Street, St. Clement's, Ipswich.
- ADDISON, C. J. (1872). Surg.-Maj. Army.
- ADDY, B. (1868). Stretton, Weld Road, Birkdale, Southport. M.D. Lond.  
1869. 1st Year Student, 1st Coll. Prize;  
Physical Society's 1st Year's Prize.  
1870. 2nd Year Student, 1st Coll. Prize;  
Physical Society's 2nd Year's Prize.  
1871. 3rd Year Student, 1st Coll. Prize;  
Prosecutor's Prize;  
Treasurer's Gold Medal.  
R.A., H.P.
- ADKINS, A. J. (1884). Lambeth Infirmary. M.D. Lond.  
Clin. Asst. Skin Dept.
- ADKINS, P. R. (1888). "Ratchcoole," Ferndale, Road, Clapham. M.D., B.S. Durham.
- ADYE, W. J. A. (1880). Church House, Bradford-on-Avon, Wilts.
- AIKINS, W. H. (1881). Wellesley Street, Toronto, Canada.
- AIR, A. C. (1863). 223, Selhurst Road, South Norwood.
- ALLCOCK, G. (1892). 332, Wandsworth Road.
- ALLDEN, S. J. (1890). 32, West Allington, Bridport. M.D., B.S. Durham.
- ALLEN, W. H. (1890). Stuart Villa, Harrington Street, Derby. B.A., M.B., B.C. Cantab.
- ALLINGHAM, J. H. (1858).
- ALLINGHAM, W. (1851). 25, Grosvenor Street, Grosvenor Square. F.R.C.S.  
1854. Descriptive Anatomy, Prize;  
Surgery, Prize.  
1855. Medicine, Prize;  
Clinical Medicine, President's Prize;  
Clinical Medicine, Treasurer's Prize.  
Surgical Tutor, Demonstrator of Anatomy, and Surgical Registrar.
- ALLIOTT, A. J. (1869). Rosendal, Sevenoaks, Kent. B.A., M.D. Cantab.

- ALPIN, W. G. P. (1877). Surg.-Capt. Bengal Army. M.D. Brux. Demonst. of Pract. Surg.
- ANDERSON, G. R. (1883). 18, Hoghton Street, Southport. F.R.C.S. R.A., A.H.P.
- ANDERSON, H. B. (1858).
- ANDERSON, M. J. B. (1889). 120, Lavender Hill.
- ANDERSON, W. (1864). 2, Harley St., Cavendish Square. F.R.C.S.; Surgeon, Lect. on Anat., and Surg. Skin Departm., St. Thomas's Hospital; Professor of Anatomy to the Royal Academy, Member of the Board of Examiners in Anatomy for the Fellowship R.C.S.; Exam. in Surg. Univ. Lond., and Conjoint Board.  
1865. 1st Year Student, 3rd Coll. Prize.  
1866. 2nd Year Student, 3rd Coll. Prize.  
1867. 3rd Year Student, 1st Coll. Prize; Physical Society's 3rd Year's Prize; Cheselden Medal.  
Surg. Registrar.
- ANDRÉ, J. E. F. (1886). The Gorse, Sidlesham, Chichester.
- ANDREW, H. (1884). House Surg., Devon and Exeter Hosp., Exeter.
- ANDREWS, C. H. (1880). Willow Lane, Norwich.
- ANDREWS, R. (1879). Chestnut Grove, New Malden, Surrey.
- ANNESLEY, W. O. T. (1871). Sandy Road, Godalming, Surrey.
- ANNESS, F. R. (1877). 32, Berners Street, Ipswich.
- ANSON, G. E. (1886). The Terrace, Wellington, New Zealand. M.D., B.C. Cantab.  
H.S., A.H.S., R.A.
- ANSTIE, T. B. (1840). 21, Northgate Street, Devizes. J.P.
- ANTHONY, T. G. (1842). Tredegar, Monmouthshire.
- APPLETON, G. (1842). Park Braws, Lizard, Helston, Cornwall (retired).
- APPLETON, H. (1838). 21, Elmdale Road, Tyndall's Park, Bristol (retired). M.D. Aberd.
- APPLEYARD, F. E. (1891). Savile House, Halifax. B.A. Cantab.  
Clin. Asst. Throat Dept.
- ARCHER, S. A. (1893). 14, Cook Street, Liverpool.
- ARMSTRONG, H. G. (1871). Wellington College, Berks.  
w 1874. 3rd Year Student, 3rd Coll. Prize.
- ARNISON, W. D. (1887). 31, Oxford Street, Newcastle-on-Tyne. M.D., B.S. Durham.
- ARNOLD, E. G. E. (1888). St. Thomas's Hospital.  
Obst. H.P.
- ARNOLD, G. J. (1888). Wickham, Glos., F.R.C.S. Surg. P. & O.  
H.S., A.H.S., Clin. Asst. Throat Dept.
- ASHE, W. P. (1872). 41, Sloane Gardens, Chelsea.
- ATKEY, P. J. (1885). 39, High Road, Streatham. Late Surg. P. & O.  
H.S., A.H.S., Clin. Asst. Throat, Ear and Skin Depts.
- ATKINSON, A. E. (1894). 3, Southampton Street, Strand.
- ATKINSON, F. P. (1860). Claremont Road, Surbiton, Surrey. M.D., C.M., Aberd.; M.R.C.P. Edin.
- AUBIN, T. J. (1854). 39, La Motte Street, St. Helier's, Jersey. M.D. St. And.
- AVELING, C. T. (1862). The Oaklands, Upper Clapton. M.D., M.S. Lond.; F.R.C.S.  
1863. Matriculation Examination — Physics and Natural History, 1st Coll. Prize;  
1st Year Student, 1st Coll. Prize.  
1864. 2nd Year Student, 2nd Coll. Prize.  
1865. 3rd Year Student, 3rd Coll. Prize.  
H.S.
- AVETOOM, S. T. (1876). Surg.-Maj. Bombay Army.
- BAINES, A. M. (1878). Toronto, Canada.
- BAKER, A. (1891). 152, York Road, Westminster. M.B., B.S. Durham.
- BAKER, W. H. (1880). 152, Westbourne Grove.
- BALLANCE, C. A. (1875). 106, Harley St., Cavendish Square. M.B., M.S. Lond.; F.R.C.S.; Assistant Surgeon, Surgeon for Diseases of the Ear, and Teacher of Practical Surgery, St. Thomas's Hospital, Assistant Surgeon to the Hospital for Sick Children, Great Ormond Street; Surg. National Hosp., Queen Square.  
w 1876-7. 3rd Year Student, 3rd Coll. Prize, and Physical Society's 3rd Year's Prize.  
1880. The Solly Medal and Prize.  
Surgical Registrar, Demonstrator of Anatomy  
H.P., H.S., A.H.S., A.H.P., R.A.
- BALLANCE, J. DES C. (1881). 155, Hagley Road, Edgbaston, Birmingham.  
R.A.



- BANHAM, Rev. H. F. (1870). Tud-denham Vicarage, Ipswich (retired). M.A., M.D. Cantab.
- BANHAM, W. W. (1882). 147, Abbeydale Road, Sheffield.
- BANKS, A. (1887). 1, Lind Terrace, Ryde, Isle of Wight. F.R.C.S., D.P.H.  
w 1887-8. 1st Year Student, 1st Coll. Prize.  
s 1890. 3rd Year Student, 2nd Coll. Prize.  
w 1890-1. 4th Year Student, The Cheselden Medal.  
H.S., A.H.S., Asst. Demonstr. of Pract. Surg., Clin. Asst. Skin Dept., Jun. and Sen. Obst. H.P.
- BARBER, H. V. (1878). 130, Queen's Road, Finsbury Park. M.A. Cantab.
- BARKER, E. M. (1892). B.A., M.B., B.C. Cantab.
- BARKER, F. (1884). Heighington, Linc.
- BARKER, F. R. (1872). Surg.-Maj., Army. M.B. Lond., D.P.H.
- BARNES, A. R. (1869). Meads Place, Meads, Eastbourne, Sussex. M.B. Edin.
- BARNES, R. Conservative Club, and Lingwood, Liss, Hants (retired). M.D., F.R.C.P. Lond.; Luml. Lect.; Censor; F.R.C.S.; F.R.C.P.I. (Hon.). Formerly Obst. Phys. and Lect. on Obst., Lond., St. Thos. and St. Geo. Hosps., and Exam. Univ. Lond., R.C.P. Lond., and R.C.S. Eng.
- BARNES, R. S. F. (1870). 7, Queen Anne Street, Cavendish Square. M.D., C.M. Aberd.; M.R.C.P. Lond., Sen. Phys. Brit. Lying-in-Hosp., Roy. Matern. Charity.
- BARNETT, H. (1883). Burway House, Church Stretton, Salop. M.A., M.B., B.C. Cantab.
- BARON, T. (1863). Ulceby, Linc. H.S.
- BARRACLOUGH, H. C. (1891). London Road South, Lowestoft. B.A., M.B., B.C. Cantab.
- BARRETT, E. E. II, Rue de l'Hotel de Ville, Neuilly, Paris, France. M.D. Brux., M.D. Paris.
- BARRETT, J. J. (1859). 170, Ramsden Road, Balham. M.D. St. And.
- BARRS, J. H. (1885). 6, Wandsworth Bridge Road, Fulham.
- BARWELL, R. (1845). 55, Wimpole Street, Cavendish Square. F.R.C.S.; Consulting Surgeon to Charing Cross Hospital.  
1850. Clinical Medicine, Prize.  
H.S., Demonstr. of Anat.
- BASHALL, C. E. (1884). Lower Knole, Kingsbridge, Devon.
- BATE, G. (1871). Late Surg. R.N.
- BATHURST, L. (1881).
- BATTLE, W. H. (1873). 2, Mansfield Street, Cavendish Square. F.R.C.S., Assistant Surgeon St. Thomas's Hospital, and Royal Free Hospital.  
w 1875. 2nd Year Student, 3rd Coll. Prize.  
w 1876-7. 3rd Year Student, The First Solly Medal and Prize.  
Resident Assistant Surgeon, Surgical Registrar, H.S., H.P., A.H.P., R.A.
- BATTYE, J. H. (1872). 84, Belgrave Road. M.D.Q.U.I.  
A.H.P.
- BAXTER, S. E. (1885). 87, Talfourd Road, Camberwell.
- BAYLISS, R. A. (1884). Spondon, Derbysh.
- BEARDSLEY, A. (1843). The Towers, Grange-over-Sands, Lanc.
- BEDDOES, T. P. (1882). 26, North Parade, Aberystwith. B.A., M.B., B.C. Cantab.; F.R.C.S.  
Clin. Asst. Skin Dept.
- BEDFORD, C. F. (1864). New Sleaford, Linc.
- BEDFORD, R. J. (1855). Kegworth, Leic.  
R.A.
- BELL, C. W. J. (1878). 61, Ugate, Louth, Linc.
- BELL, E. S. (1883). Asst. Med. Off. St. Olave's Union Infirm., Lower Road, Rotherhithe.
- BELL, J. A. (1865). Deravona, Watts' Avenue, Rochester, Kent.  
H.S., R.A.
- BELL, J. V. (1858). Star Hill, Rochester, Kent. M.D. St. And., F.R.C.S.  
H.S., R.A.
- BENINGTON, R. C. (1872). 59, Osborne Road, Newcastle-on-Tyne. M.D., B.S., L.S.Sc. Durh.; Med. Tutor Univ. Durh. Coll. of Med.  
H.P., A.H.P., R.A.
- BENNETT, A. W. 6, Park Village East, Regent's Park. M.A., B.Sc. Lond. Lecturer on Botany.
- BENNETT, H. S. (1868). 53, Upper Berkeley Street, Portman Square, and 2, Birchlin Lane. M.B. Cantab.  
R.A.
- BENSLEY, E. C. (1858). 127, Fellows Road, South Hampstead. F.R.C.S.
- BENSON, G. V. (1888). 13, Queen Anne's Grove, Bedford Park, Chiswick. M.A. Cantab.
- BENSUSAN, A. D. (1887). M.D. Brux.
- BENT, G. (1879). Surg.-Capt., Army

- BENTHALL, W. (1877). 102, Friar Gate, Derby. B.A., M.B. Cantab.
- BERNAU, H. F. (1885). Napier, New Zealand.  
Clin. Asst. Throat Dept.
- BERNAYS, A. V. (1875). Solihull, Warwk. B.A., M.B. Cantab.  
w 1880-1. 3rd Year Student, 1st Coll. Prize.
- BERNAYS, H. L. (1871). Rivoli, Old Charlton, Kent.  
w 1873. Prosector's Prize.
- BERNAYS, S. A. (1870). Church House, 185, St. Leonard's Road, Bromley.
- BERRIDGE, W. R. M. (1884). Enderby, near Leicester.
- BEVILLE, F. W. (1884). 25, Hanover Square, and The Firs, Palace Road, East Molesey, Surrey.  
Clin. Asst. Skin Dept.
- BIBBY, J. (1876). Withy House, Bamber Bridge, Lanc.
- BICKLE, L. W. (1877). Mount Barker, Adelaide, S. Australia. F.R.C.S. Edin.  
s 1878. 1st Year Student, 3rd Coll. Prize.  
s 1879. 2nd Year Student, 1st Coll. Prize.  
H.P.
- BIDDLE, D. (1859). Charlton Lodge, Kingston-on-Thames.  
1860. 1st Year Student, Treasurer's Prize ;  
Matriculation Exam., Prize.  
H.S.
- BIDWELL, L. A. (1882). 59, Wimpole Street, Cavendish Square. F.R.C.S. H.S., A.H.S.
- BIGGAM, W. (1886). 25, Foyle Street, Sunderland. M.A., M.B. Durh.
- BIGGER, W. G. (1883). Aberfoyle, Streatham Common. B.A.R.U.I., M.B., M.Ch.
- BILLSON, C. (1887). 34, Alderney Street, Pimlico.
- BIRD, G. W. H. (1890). Late P. & O. Service. B.A., M.B., B.C. Cantab.  
H.P., Clin. Asst. Skin Dept.
- BIRD, W. V. (1870). 4, Eaton Villas, West Brighton (retired). M.D. Aberdeen, M.R.C.P.
- BLAHER, P. L. (1890). St. Thomas's Hospital.  
Obst. H.P., Clin. Assist. Throat Depart.
- BLACK, J. (1870). B.A., M.B. Cantab., F.R.C.S., Aural Surg. and Lect. on Anat. Westm. Hosp.  
w 1870. 2nd Year Student, Prosector's Prize.  
H.S.
- BLACK, V. S. (1854). Stockland, Honiton, Devon.
- BLACKER, A. B. (1879). 15, West Eaton Place, Eaton Square. M.D., B.S. Durh.  
Clin. Asst. Ear, Throat and Electrical Depts.
- BLADES, C. C. (1853). 171, Kensington Park Road. M.D. St. And.
- BLAIKIE, A. B. (1885). Oswestry, Salop. M.A., M.B., B.C. Cantab.
- BLAIR, C. S. (1889). Emsworth Villas, Kew Gardens, Surrey. M.D. Durh.
- BLAKE, T. W. (1857). Hurstbourne, Bournemouth, Hants.
- BLAKEMAN, C. J. (1885). Res. Med. Off., City Hosp., South Grafton Street, Liverpool.
- BLOUNT, G. B. C. (1889). Stanwell, Staines.  
Clin. Asst. Ear and Electr. Depts.
- BLUNSOM, J. (1873).
- BLUNT, A. H. (1884). 19, St. Nicholas Street, Leicester.
- BODINGTON, G. F. (1885). Provincial Asyl., New Westminster, British Columbia. M.D. Durh. ; M.R.C.P. Lond., F.R.C.S.
- BOND, B. W. (1886). The Priory, Godalming. M.B., B.S. Durh.
- BOND, C. K. (1879). D.P.H.
- BOND, W. A. (1884). Holborn Town Hall. M.A., M.D., B.C., D.P.H. Cantab., M.R.C.P.  
R.A., Clin. Asst. Throat Dept.
- BOOTH, E. J. H. (1865).
- BOOTH, J. W. (1863). Hartford, Connecticut, U.S.A.
- BOSTOCK, L. (1891). Liskeard, Cornwall.
- BOTT, W. G. (1871). 414, Clapham Road. J.P.
- BOUCK, J. A. (1887). 447, Battersea Park Rd.
- BOULGER, I. (1860). Surg.-Maj., Army.  
1870. 1st Year Student, Sir Wm. Tite's Scholarship.  
1871. 2nd Year, Sir Wm. Tite's Scholarship.  
w 1872. 3rd Year, Sir Wm. Tite's Scholarship.  
H.S., R.A.
- BOWEN, R. E. A. (1874). 285, Cambridge Road, Bethnal Green

- BOWRING, W. A.** (1887). The Cottage, Lovelace Road, Surbiton. H.P., Jun. and Sen. Obst. H.P.
- BOX, C. R.** (1884). St. Thomas's Hospital. M.D., B.S., B.Sc. Lond., F.R.C.S., Med. Registrar, and Demonstrator of Practical Medicine. w 1886-7. 1st Year Student, 2nd Coll. Prize. H.S., A.H.S., Res. H.P., Clin. Asst. Ear Dept.
- BOYCOTT, A. N.** (1884). Asst. Med. Off. Lond. Co. Asyl., Cane Hill, Purley, Surrey. M.D. Lond. H.S., A.H.S., R.A., Clin. Asst. Skin Dept.
- BOYD, R. J.** (1873). Sydney, New South Wales.
- BOYER, J. J. W. R.** (1866). M.D. Heidelb.
- BOYS, A. H.** (1871). Chequer Lawn, St. Alban's, Herts.
- BRACEY, H. R.** (1870). 115, Bristol Road, Edgbaston, Birmingham.
- BRADDON, C. H.** (1857). Ryecroft House, Cheetham Hill, Manchester. M.D. St. And., J.P. R.A.
- BRACKENRIDGE, F. J.** (1889). 6, Cambrian Road, Richmond, Surrey. H.P., Clin. Assist. Electr. Dept.
- BRETON, L. M.** (1888). Portwood House, Portwood, Southampton.
- BREWIS, A. S.** (1887). Hamilton, Auckland, New Zealand. M.D., B.S. Durh.
- BRINGLOE, J.** (1848). 41, Milkwood Road, Herne Hill.
- BRISLEY, C. W.** (1884). Eversley, Tower Road West, St. Leonard's-on-Sea.
- BRISTOW, G. H.** (1884). F.R.C.S.I., M.D. Brux. Clin. Asst. Throat and Ear Depts.
- BRISTOWE, H. C.** (1882). Wrington, Somerset. M.D. Lond. H.P., Ophth. H.S., A.H.S.
- BROCK, C. DE L.** (1871). Alstone Lawn, Tooting Graveney.
- BROCK, J.** (1871). 28, Wilbury Road, Hove, West Brighton.
- BROCKATT, A. A.** (1881). Hazeldean, Malvern, Worc. M.D. Brux. R.A., H.P., Clin. Asst. Skin, Throat and Ear Depts.
- BROCKWAY, A. B.** (1881). Southport, Queensland.
- BRODIE, T. Gregor.** (1895). Lindfield, Uxbridge Road, Surbiton. M.D. Lond. Lecturer on Physiology, St. Thomas's Hospital.
- BROMET, E.** (1889). Hosp. for Women, Soho Square.
- BROOK, H. D.** (1881). Fareham, Hants. D.P.H.
- BROOK, W. F.** (1881). Longlands House, Swansea. F.R.C.S. H.S., A.H.S., Clin. Asst. Ear, Skin and Throat Depts.
- BROOKS, C.** (1885). Chalfont St. Peter, Bucks.
- BROWN, F. G.** (1859). 17, Finsbury Circus. 1861. 2nd Year Student, 3rd Coll. Prize. 1862. 3rd Year Student, 3rd Coll. Prize.
- BROWN, G. W.** (1890). The Uplands, East Grinstead.
- BROWN, L. D.** (1878). Henley Villa, Ealing.
- BROWNE, E. A.** (1863). 39, Rodney St., Liverpool. F.R.C.S. Edin. Lect. on Ophth. Univ. Coll. Liverpool.
- BRUCE, R. M.** (1877). Med. Superint., West. Hosp., Seagrave Rd., Fulham.
- BRYAN, F.** (1879). Senior Asst. Med. Off. Lond. Co. Asyl., Colney Hatch. M.B. Durh.
- BUCKLEY, T. W.** (1877). The Poplars, Thrapston, Northants.
- BULL, H. A.** (1890). Birch Hall, Ingestre, Staffs.
- BULLEN, F. ST. J.** (1880). Manor House, Redland Road, Bristol.
- BULLOCK, H. M.** (1879). 2, Corban Place, Bath Rd., Hounslow, Middlx.
- BULLOCK, T. W.** (1879). Overtown House, Spring Grove, Isleworth.
- BULSTRODE, H. T.** (1881). Local Govt. Bd., Whitehall. M.A., M.D. Camb., D.P.H. H.P., A.H.P., Clin. Asst. Throat, Skin and Ear Depts.
- BURD, G. V.** (1873). Okehampton, Devon.
- BURDEN, H.** (1886). Surg.-Lt. I.M.S. Bengal. F.R.C.S. w 1886-7. 1st Year Student, The William Tite Scholarship. s 1887. 1st Year Student, 2nd Coll. Prize. w 1887-8. 2nd Year Student, 2nd Coll. Prize. H.S., A.H.S.

- BURNS, A. H. (1877). Hamslade, Sweyn Road, Cliftonville, Margate.
- BURTON, C. F. (1885). 1, Crescent Place, Whitby, Yorks.
- BURY, A. T. (1870). Sheen, Ashbourne, Derbyshire.
- BURY, G. W. F. (1853). Chew Magna, Somers. F.R.C.S.
- BUTLER, G. R. (1877). 38, Carlton Vale.
- BUTTERWORTH, S. (1878). Surg.-Capt., Army.
- BYERS, D. W. (1845). 20, Leicester Road, Maindee, Newport, Mon.
- BYHAM, W. L. (1879). 15, High Street, Spalding, Linc.
- CADE, H. L. (1880). Albert Villa, 2, Queen's Road, Peckham.
- CAIGER, F. F. (1878). Med. Superint. S.W. Fever Hosp., Stockwell. M.D., B.S., M.R.C.P., Lond.; D.P.H. Cantab.  
w 1879-80. 1st Year Student, 3rd Coll. Prize.  
w 1880-1. 2nd Year Student, 3rd Coll. Prize.  
w 1882-3. 4th Year, the Mead Medal.  
H.S., A.H.S., H.P., A.H.P., R.A.
- CALVERT, J. T. (1882). Surg.-Capt. Bengal Army. M.B. Lond.; D.P.H. H.P., H.S., A.H.S.
- CALWELL, W. (1884). 1, College Square, North Belfast. M.A., M.D., M.Ch., R.U.I.
- CAMERON, C. (1858). Surg.-Lt.-Col., I.M.S. Bengal.
- CAMERON, C. H. H. (1871). Kolassy House, Old Town, Eastbourne. D.P.H. R.A.
- CAMERON, W. J. Ellerslie, Balham Park Road. M.B. Lond.
- CAMPBELL, A. J. (1888). 70, Craster Road, Elm Park, Brixton Hill.
- CANDLER, G. (1891). Harleston, Norfolk. B.A. Cantab. Obst. H.P.
- CANN, R. T. (1880). 20, Tavistock Place, Plymouth.  
s 1882. 2nd Year Student, 1st Coll. Prize.  
s 1883. 3rd Year Student, 2nd Coll. Prize.
- CANNOCK, C. W. (1873). Shefford, Beds.
- CAPORN, A. W. (1885). 2, Atkins Road, Clapham Park.
- CARPENTER, A. B. (1870). Wykeham House, Bedford Park, Croydon. Surrey. M.A., M.B. Oxon. H.P., A.H.P., H.S.
- CARPENTER, E. (1861). Trevathan, Albemarle Road, Beckenham, Kent.
- CARPENTER, G. (1878). 12, Welbeck Street, Cavendish Square. M.D. Lond.; M.R.C.P.  
w 1880-1. 1st Year Student, 3rd Coll. Prize.  
s 1881. 1st Coll. Prize.  
w 1881-2. 2nd Year Student, 3rd Coll. Prize; Prosecutor's Prize.
- CARPENTER, J. W. (1853). Goudhurst, Kent. M.D. St. And.
- CARR-WHITE, P. (1889). Surg.-Capt. Madras Army. M.B., C.M. Edin.
- CARSTAIRS, H. J. (1884). Chiswell Lodge, Worcester Park, Surrey. Clin. Asst. Throat Dept.
- CARTER, A. W. (1889). M.B., C.M. Edin.
- CARTER, W. (1863). 78, Rodney Street, Liverpool. M.D., B.Sc., LL.B., F.R.C.P. Lond.; F.R.C.S.I.; J.P.
- CARTER, W. R. (1886). 25, High St., Warwick. M.A., M.B., B.C. Cantab. R.A., S.O.C.
- CARVER, J. R. (1890). The Hollins, Marple, Stockport. Clin. Asst. Skin Dept.
- CASTLE, H. (1874). 99, The Mall, Newport, I.W. M.B. Lond.  
w 1874-5. 1st Year Student, 2nd Coll. Prize.  
s 1875. 3rd College Prize.  
w 1876-7. Physical Society's 3rd Year's Prize.  
H.S., A.H.S., R.A.
- CAUDLE, A. W. W. (1856). Henfield, Sussex.  
1858. Clinical Medicine, Prize.
- CAUDLE, C. E. (1858). Nazira, Assam, India.
- CAUDWELL, E. (1886). Harleston, Norfolk.
- CAVE-BROWN-CAVE, H. W. (1891). Liford Hall, King's Norton, Worc.
- CHAFFERS, E. (1860). Broomfield, Keighley, Yorks. F.R.C.S.
- CHALDECOTT, C. W. (1848). Nower Lodge, Dorking, Surrey.  
1849. Materia Medica, 2nd Prize;  
1st Year Student, Scholarship.  
1850. Surgery, Prize.  
1851. Physiology, Prize;  
Physical Society's Essay, Treasurer's Prize;  
General Proficiency, Treasurer's Silver Medal.



- CHALDECOTT, H. (1862). Rose Hill House, Dorking, Surrey.
- CHALDECOTT, J. H. (1880). Madgehill, Hanwell.
- CHANCE, R. F. (1887). Rockstone House, Carlton Crescent, Southampton. Obst. H.P.
- CHALMAN, G. W. (1884). Croxby House, Hounslow.
- CHARPENTIER, A. (1879). Rathmines House, Uxbridge, Middlx. M.D. Durh.  
1880. 4th Year. The Mead Medal Exam., Special Mention.
- CHARSLEY, R. S. (1888). The Barn, Slough, Bucks. B.A. Oxon.
- CHEVERS, H. L. G. (1879). Surg.-Capt. Army.
- CHILD, G. A. (1891). Pinewood House, Byfleet.
- CHISHOLM, M. (1885). Halifax, Nova Scotia, Canada.
- CHOPPING, A. (1890). Middle Mill, Colchester.
- CHRISTIE, F. (1886).
- CHURCHILL, F. (1867). 4, Cranley Gardens, Queen's Gate. M.D., C.M. Edin.; F.R.C.S. Surg. Registr.
- CLAPTON, E. (1850). 22, St. Thomas's Street, Southwark, and Towercroft, Lee. M.D., F.R.C.P., F.R.C.S.  
1851. 1st Year Student, 1st Scholarship; Descriptive Anatomy Prize; Chemistry, Prize.  
1852. 2nd Year Student, Scholarship; Physiology, Prize; Materia Medica, Prize; Botany, Prize.  
1853. 3rd Year Student, Scholarship; Clinical Medicine, Treasurer's Prize; Physical Society's Essay, Treasurer's Prize.  
1854. Ophthalmic Reports, Governor's Prize; Clinical Medicine, Mr. N. Smith's Prize.  
Physician and Lecturer on Materia Medica.
- CLAPTON, W. (1854). 27, Queen Street, Cheapside. F.R.C.S.  
1855. Materia Medica, Prize.  
1856. Clinical Medicine, Prize.
- CLARK, F. (1868). 13, Fenchurch St.
- CLARK, H. J. (1887). Wareham, Dorset.
- CLARK, J. H. (1865). Goshen, St. Elizabeth, Jamaica. M.R.C.P. Edin.  
1867. 2nd Year Student, Physical Society's 2nd Year's Prize.
- CLARKE, A. (1855). Stock, Ingatestone, Essex.
- CLARKE, A. W. V. (1890). 100, Stondon Park, Honor Oak Park.
- CLARKE, J. M. (1884). 28, Pembroke Road, Clifton, Bristol. M.A., M.D. Cantab., F.R.C.P. Physn. and Pathol. Bristol Gen. Hosp., Lect. on Pract. Physiol. Bristol Med. Sch. H.P.
- CLARKE, J. T. (1884).
- CLARKSON, F. C. (1880). Surg.-Capt. Bengal Army.
- CLARKSON, J. W. (1870). Surg.-Lt.-Col. Bombay Army. H.P., H.S.
- CLEAVER, H. A. (1834).
- CLEAVER, W. F. (1879). Clarence Street, Port of Spain, Trinidad.
- CLEGHORN, G. (1868). Blenheim, Marlboro', New Zealand. M.D. Durh. H.S.
- CLEMENTS, W. H. (1879).
- CLEVE, R. P. (1862). 4, Lincoln's Inn Fields. H.S., R.A.
- CLIFTON, G. (1866). 48, London Road, and 7, Bowling Green Street, Leicester.
- CLOWES, J. P. (1884). Asst. Med. Off. Co. Asyl., Prestwich, Manchester.
- CLUTTON, H. H. (1872). 2, Portland Place. M.A., M.B. Cantab.; F.R.C.S. Surgeon and Lect. on Surgery, St. Thomas's Hospital; Examiner in Surgery, Univ. Camb. Res. Asst. Surg., Surg. Reg., H.S.
- COAD, J. E. (1886). Surg. R.N. M.B. Durh.
- COATES, W. H. (1868). Hucknall Torkard, Notts.
- COBBETT, L. (1886). 2, Round Church Street, Cambridge. M.A., M.B. Cantab.; F.R.C.S.; Demonstr. of Pathol. Univ. Camb. H.S., A.H.S., H.P.
- COCKELL, F. E., Jun. (1872). Holly Lodge, Forest Road, Dalston. Merchant Taylors' Scholar.
- COGILL, H. (1886). Asst. Med. Off. Western Fever Hosp., Fulham, S.W.

- COLBY, G. (1857). Brawby Park, Pickering, Yorks.
- COLBY, W. T. (1848). The Mount, Malton, Yorks. M.D. St. And.; J.P.
- COLEMAN, P. (1884). Clacton-on-Sea.
- COLLCUTT, A.M. (1886). Sandfields, East Sheen, Mortlake. M.A., M.B., B.C. Cantab.  
H.P. Clin. Asst. Ear Dept.
- COLLIER, H. (1882). 21, South Quay, Gt. Yarmouth. M.D. Brux.
- COLLIER, M. P. M. (1874). 133, Harley St., Cavendish Sq. M.S., M.B. Lond.; F.R.C.S.  
H.S., A.H.S., A.H.P.
- COLLIER, S. R. (1889). Clarence Villa, Hartfield Rd., Wimbledon. M.D., M.Ch. R.U.I.
- COLLIER, W. A. (1892). 13, Gt. Smith St., Westminster.
- COLLIS, E. L. (1893). B.A., M.B., B.Ch., Oxon.  
w 1895-6. Bristowe Medal.
- COLMAN, G. M. H. (1877). Surg.-Maj. Army (retired). M.A., M.B. Cantab. Cambridge.
- CONFORD, G. J. (1892). 40, Lyndhurst Grove, Peckham. B.A., M.B., B.Ch. Oxon.  
H.S., A.H.S., Clin. Asst. Elect. Dept.
- CONNER, J. R. T. (1888). 413, Kingsland Road. B.A.R.U.I., M.D., M.Ch.
- COOK, P. I. (1873). Byfield, High St., Bromley, Kent. M.D. Brux.
- COOK, R. (1864). Leiston, Suffolk. M.D. Glasg.
- COOK, S.B. (1882). Doris, Ellington Road, Ramsgate. B.A. Cape of Good Hope; M.D. Lond.  
s 1883. 1st Year Student, 2nd Coll. Prize.  
A.H.S., A.H.P., Clin. Asst. Skin Dept.
- COOK, T. D. (1880). Glendon, Torquay. M.B., C.M. Glasg.
- COOKE, C. W. (1883). 107, Walm Lane, Willesden Green. M.D. Lond. Merchant Taylors' Scholar.  
w 1883-4. 1st Year Student, 1st Entrance Science Scholarship.  
H.P., A.H.S., Clin. Asst. Throat and Ear Depts.
- COOKE, J. (1853). Tettenhall, Wolverhampton. M.B. Lond.; F.R.C.S. 1855. Comparative Anatomy, Prize.
- COOKE, J. B. (1874). The Elms, Parkhurst, I.W.
- COOKSON, H. (1881). Surg.-Maj., I.M.S. Bengal. (Retired). F.R.C.S.
- COOMBE, A. T. (1871). 81, Clarendon Road, Notting Hill.
- COOMBE, C. F. (1882). 459, Crookes Moor Road, Sheffield.
- COOPER, G. F. (1878). Pisagua, Chili, South America. M.B., B.S. Lond.  
H.S., A.H.S., A.H.P., R.A.
- COOPER, H. J. (1886). Southwood, 36, Birdhurst Road, South Croydon, Surrey. M.A., M.B., B.C. Cantab.  
H.P., Clin. Asst. Ear and Skin Depts.
- COOPER, H. S. (1886). Brightlingsea, Essex.  
s 1887. 2nd Year Student, 2nd Coll. Prize.
- COOPER-PATTIN, W. H. (1883). Municipal Offices, Norwich. M.A., M.B., B.C., D.P.H. Cantab. Med. Off. Health Norwich.
- COPELAND, W. H. L. (1885). 59, Warwick Road, Earl's Court. M.A., M.B., B.C. Cantab.  
H.P.
- COPEMAN, A. H. (1890). 19, Cromwell Crescent, South Kensington. B.A. Cantab.
- COPEMAN, S. M. (1883). Local Govt. Board, Whitehall. M.A., M.D. Cantab.; M.R.C.P., D.P.H. Lecturer on Pub Health, Westminster Hosp. Demonstrator of Physiology and Morbid Histology.
- CORBETT, T. (1857). Severn House, Droitwich, Worc.
- CORBIN, E. K. (1870). 9, Saumarez Street, St. Peter Port, Guernsey.
- CORBIN, M. A. B. (1832). 9, Saumarez Street, St. Peter Port, Guernsey. F.R.C.S.  
1834. Cheselden Medal.
- CORNEY, B. G. (1868). Suva, Fiji.
- CORNWALL, J. W. (1862). 25, Albion Street, Hyde Park. M.A., M.B., B.C. Cantab.  
Clin. Asst. Throat Dept.
- CORY, I. R. (1878). Shere, Guildford, Surrey.
- CORY, R. (1867). 73, Lambeth Palace Rd. M.A., M.D. Cantab., F.R.C.P., Joint Lect. on For. Med. Physn. Vacc. Dept.  
1870. Physical Society's 3rd Year's Prize.  
H.S., Asst. Obst. Phys.
- COULTER, W. (1881). 2/2, Herrington Street, Calcutta, India. M.D., M.Ch.R.U.I.

- COUSINS, J. W. (1853). Riversdale, Kent Rd., Southsea. M.D. Lond.; F.R.C.S., J.P.  
1855. Surgery, Prize;  
Midwifery, Prize.  
1856. Clinical Medicine, Prize;  
Surgery and Surgical Anatomy,  
Cheselden Medal.
- COWELL, A. R. 1887. M.A., M.B.,  
B.C. Cantab.
- COWEN, E. I. (1875).
- COWEN, E. J. (1892). Royton, Lancs.  
M.B., B.S. Dub.
- COWEN, P. (1861). 47, Ingleby Road,  
Upper Holloway. M.D. Durh.;  
D.P.H.  
1862. 1st Year Student, 2nd Coll. Prize.  
1863. 2nd Year Student, 2nd Coll. Prize.  
1864. 3rd Year Student, 2nd Coll. Prize.
- COWEN, T. P. 1884. 47, Ingleby  
Rd., Upper Holloway. M.D., B.S.  
Lond.  
w 1884-5. 1st Year Student, Half 1st and  
2nd Coll. Prizes.  
s 1885. 1st Year Student, 2nd Coll. Prize.  
w 1885-6. 2nd Year Student, 1st Coll. Prize.  
s 1886. 2nd Year Student, 1st Coll. Prize.  
w 1886-7. 3rd Year Student, 2nd Coll. Prize.  
H.P., H.S., A.H.S., Clin. Asst. Ear Dept.
- COWEN, W. A. D. (1873). Surg.-Maj.  
Army.
- COWIE, A. M. (1890). Bank Buildings,  
Hong Kong, China. M.B., C.M.  
Aber.
- COWIE, R. A. (1890). St. John's  
College, Cambridge.
- COX, A. E. (1887). 36, Hoghton Street,  
Southport. M.B., C.M. Edin.
- COX, A. E. (1881). 58, High St., and  
78, Queen's Rd., Watford, Herts.
- COX, J. L. C. (1879). St. Ann's Bay,  
Jamaica.
- COXWELL, C. F. (1879). Brighton,  
Melbourne, Australia. M.D. Cantab.,  
M.R.C.P.  
1880. 4th Year Student, the Mead Medal.  
H.P.
- CRANSTOUN, C. B. (1881). 15, Broad  
Street, Ludlow, Salop. M.B. Durh.
- CRANSTOUN, G. (1881). 3, Brand  
Lane, Ludlow, Salop. M.B. Durh.
- CREIGHTON, C. 32, Gt. Ormond  
Street. M.A., M.D., C.M. Aberd.;  
M.A. Cantab.  
Surg. Registr., 1873.
- CREIGHTON, E. (1878). Tankerville  
House, Greyhound Lane, Streatham  
Common.
- CRICK, A. (1885). Vale Lodge,  
Abbey Road, St. John's Wood.
- CRICK, S. A. (1874). Junior Army  
and Navy Club, St. James's. M.B.,  
M.S. Durh.  
w 1875-6. Prosector's Prize.  
w 1876-7. 3rd Year Student, 3rd Coll. Prize.  
A.H.P., A.H.S.
- CRICK, W. T. (1877). Rupert's Rest,  
Great Glenn, Leic.
- CRISP, E. H. (1883). The Lawns,  
Balham Hill. B.A. Cantab.  
Clin. Asst. Skin, Throat, and Ear Depts.
- CRISP, T. (1874). M.B. Lond.
- CROFT, J. (1850). 6, Mansfield Street,  
Cavendish Sq. F.R.C.S., Consulting  
Surgeon St. Thomas's Hospital.  
Special Lecturer on Clinical Surgery,  
Surgeon, Lecturer on Practical Surgery,  
and Assistant Demonstrator of Anatomy.
- CROSBY, H. T. (1880). 19, Gordon Sq.  
M.A., M.B., B.C. Cantab.
- CROSBY, T. B. (1850). 19, Gordon Sq.  
M.D. St. And.; F.R.C.S.  
1851. Physiology, Prize;  
Descriptive Anatomy, Prize;  
Medicine, Prize;  
Surgery, Prize.  
1852. Physiology, Prize;  
Forensic Medicine, Prize;  
Practical Chemistry, Prize;  
Surgery and Surgical Anatomy,  
Bronze Cheselden Medal;  
Comparative Anatomy, Prize.  
H.S. and Demonstr. of Anat.
- CROSS, E. J. (1883). St. Neots, Hunts.  
D.P.H. Cantab.
- CROSS, G. (1887). Burgh, Lincolnsh.
- CROSS, J. (1888). 1, Finchley Road,  
Kennington Park.
- CROSSMAN, J. (1870). 331, Wands-  
worth Road. M.D. Durh.  
1871. Physical Society's 1st Year's Prize.  
1872. Physical Society's 2nd Year's Prize.  
1873. Physical Society's 3rd Year's Prize.  
H.S.
- CROUCH, H. C. (1890). 13, Maitland  
Park Villas, Haverstock Hill.  
w 1890-1. 1st Year Student, 2nd Entrance  
Science Scholarship.  
H.S., A.H.S.
- CROUCHER, H. The Limes, 320, Dart-  
ford Road, Dartford, Kent (retired).
- CROUDACE, J. H. (1883). 23, Marston  
Road, Stafford.
- CROWDY, F. D. (1881). 1, Higher  
Terrace, Torquay. M.A., M.D. Oxon.  
w 1884-5. 4th Year Student, the Mead  
Medal.  
H.S., A.H.S., H.P.

- CROXFORD, W. C. (1883). Havelock House, Park Road, Peterborough.
- CUFF, A. W. (1891). Res. Med. Off. Gen. Infirm. Sheffield. B.A., M.B., B.C. Cantab., F.R.C.S.  
H.S., A.H.S., Clin. Asst. Throat Dept.
- CULLINGWORTH, C. J. 14, Manchester Square. M.D., Hon. D.C.L. Durh.; F.R.C.P.; Obst. Phys. and Lect. on Midw. and Dis. of Women, St. Thomas's Hospital.
- DADACHANJI, E. R. (1880). Baroda, India.
- DALES, W. (1878). 254, St. Phillip's Road, Sheffield.
- DALGADO, D. G. (1879). Savantvadi, India. M.D. Brux.
- DANIEL, E. G. C. (1892). The Silver Birches, Epsom. B.A., M.B., B.C. Cantab.  
H.P.
- DANIEL, R. N. (1886). 6, Leyland Road, Lee.
- DANVERS, H. (1882). Hotel des Iles Britanniques, Bordighera, Italy.
- DARBYSHIRE, D. E. (1892). 44, Harold Road, Upper Norwood. M.B. Vict.
- DARKER, G. F. (1887). 21, Palace Square, Upper Norwood.
- DARTER, G. B. S. (1885). Myrtle House, Cape Town. M.B., B.S. Durh.
- DAVIDSON, A. D. (1872). 9, Picton Place, St. Helen's Road, Swansea. M.A., M.D. Cantab.  
Ophth. Asst.
- DAVIDSON, G. (1888).
- DAVIES, A. O. (1886). Penrallt, Machynlleth, Montg.
- DAVIES, D. S. (1874). Public Health Offices, 40, Prince Street, Bristol, and 60, Oakfield Road, Clifton. (Not in private practice.) M.B., M.D. (State Med.) Lond.; D.P.H. Cantab.  
1875-6. Physical Society's 1st Year's Prize.  
H.S., A.H.S., A.H.P.
- DAVIES, S. H. R. (1888). Ashleigh, Teignmouth, S. Devon.
- DAVIS, E. H. (1870). West Hartlepool. J.P.  
R.A.
- DAVIS, G. W. (1880). Sunnysdene, Main Road, Sidcup, Kent. M.D., B.S. Durh.
- DAVIS, H. E. (1882). 71, Winbush Road, Hitchin, Herts.
- DAVIS, H. J. (1889). 15a, Pembroke Crescent, Bayswater. M.A., M.B., B.C. Cantab.  
H.S., A.H.S.
- DAVIS, R. (1889). Darrickwood, Orpington, Kent.
- DAWNAY, A. H. P. (1892). St. Thomas's Hospital.  
Ophth. H.S.
- DAY, E. J. (1871). Dorchester.
- DAY, W. H. (1843.) Surrey Street Norwich.
- DEANE, E. (1873). Rodber House, Wincanton, Somers.
- DE CAUX, H. L. (1881). The Eagles, Gregory Boulevard, Nottingham.
- DECK, J. F. (1859). Ashfield, Sydney, N.S. Wales. M.D. St. And.  
1860. 1st Year Student, 1st Coll. Prize.  
1861. 2nd Year Student, 1st Coll. Prize  
Physical Society's Prize.  
1862. 3rd Year Student, 1st Coll. Prize  
Physical Society's Prize;  
Cheselden Medal;  
Treasurer's Gold Medal.
- DE GRUCHY, C. W. (1881). 30, High Street, Caerleon, Monmouthsh.
- DE JERSEY, W. B. (1886). Waterden Road, Guildford. B.A., M.B., B.C. Cantab.  
A.H.P. Clin. Asst. Ear Dept.
- DE LOM, H. A. (1880). Surg.-Capt. Army.
- DENNE, T. V. de. (1864). Cradley Heath, Staffordsh.
- DEWES, F. J. (1880). Surg.-Capt. Madras Army.
- DE WET, P. C. (1882). Pretoria, Transvaal, S. Africa.
- DEWHURST, J. H. (1887). Chipping Campden, Glouc. M.A., M.B., B.C. Cantab.  
H.S., A.H.S.
- DE WOODS, L. E. G. (1877). 20, St. John's Hill, Shrewsbury.
- DICKENS, C. H. (1888). 269, Stanhope St. M.B., B.S. Durham.
- DICKERSON, S. H. (1851). Brig.-Surg. Army (retired).



DICKINSON, W. G. (1871). Elm Bank, West Hill, Putney Heath. D.P.H.

DICKSON, H. A. D. (1888). King's-Somborne, Stockbridge. F.R.C.S. H.S., A.H.S.

DICKSON, T. H. (1885). Custom House, Lt. Thames Street, and 32, Belvedere Road, Upper Norwood. M.A., M.B., B.C. Cantab. A.H.P., Clin. Asst. Throat Dept.

DILLON, R. W. (1888). 1, Galveston Road, East Putney.

DIXON, H. L. (1888). Asst. Med. Off. St. Andrew's Hosp., Northampton. M.A., M.B., B.C., D.P.H. Cantab.

DIXON, W. E. (1890). 28, Benson Rd., Forest Hill. B.Sc. Lond.  
w 1890-91. 1st Year Student, 1st Entrance Science Scholarship.  
s 1891. 1st Year Student, 2nd Coll. Prize. H.P., Clin. Asst. Electr. Dept.

DOBSON, A. (1889). The Limes, Holbeach, Linc.

DOBSON, N. C. (1864). 27, Victoria Square, Clifton, Bristol. F.R.C.S., Prof. Surg. Bristol Univ. Coll., Cons. Surg. Bristol Gen. Hosp.  
1865. 1st Year Student, 1st Coll. Prize.  
1866. 2nd Year Student, 1st Coll. Prize.  
1867. 3rd Year Student, 2nd Coll. Prize;  
A Prize and Hon. Cert. for Proficiency in Surgery and Surgical Anatomy at the Cheselden Medal Examination;  
Treasurer's Gold Medal.  
H.S.

DODD, G. H. (1878). Hill Lane, Southampton. B.A. Cantab.

DONKIN, H. B. (1868). 108, Harley Street, Cavendish Sq. M.A., M.D. Oxon.; F.R.C.P. H.P.

DORMAN, M.R.P. (1888). 9, Norfolk Crescent, Hyde Park, W. M.A., M.B., B.C., D.P.H. Cantab. H.P., Clin. Asst. Throat Dept.

DOUBLEDAY, J. (1848). Milford, Godalming, Surrey (retired).

DOUDNEY, G. H. (1876). St. Lawrence, Wainfleet, Linc. M.B. Durh.

DOUGLAS, A. L. (1878). 163, Westbourne Terr., Hyde Park.

DRAKE, C. H. (1857). Brixton Hill.  
1857. 2nd Year Student, Treasurer's 1st Prize;  
Clinical Medicine, 2nd Prize.  
1859. Surgery and Surgical Anatomy, Cheselden Medal;  
General Proficiency, Treasurer's Medal.  
H.S.

DRAKE, T. (1857). Red House, Winchester.  
1858. 2nd Year Student, Treasurer's 1st Prize.  
1859. 2nd Year Student, President's Prize.  
1860. 3rd Year, 1st Coll. Prize;  
Surgery and Surgical Anatomy, Cheselden Medal;  
General Proficiency, Treasurer's Medal.

DRAKE, W. E. (1888). Red House, Winchester. M.A., M.B., B.C. Cantab.

DREAPER, J. B. (1877). Parwich, Ashbourne, Derbyshire.

DRESSER, A. K. (1872).

DRINKWATER, T. W. (1871). Chemical Laboratory, 5, Teviot Place, Edinburgh. Lect. on Chem. Sch. of Med. Edin.; Exam. in Chem. and Pub. Health R.C.S. Edin.

DRUITT, A. B. (1880).

DUFF, J. (1885). 5, Abbey St., Abbey Sq., Chester. M.D., C.M. Glasg.; M.R.C.P. Clin. Asst. Throat Dept.

DUKES, C. (1864). Sunnyside, Rugby, Warwickshire. M.D., B.S. Lond., M.R.C.P., J.P.; Physician to Rugby School, and Senior Physician to Rugby Hospital.  
H.S.

DUKES, T. A. (1885). 16, Wellesley Road, Croydon, Surrey. M.B., B.Sc. Lond. H.P.

DUMERGUE, H. W. (1884). 88, Victoria Street, Westminster. M.A., M.D., B.C. Cantab.

DUNCAN, H. (1882). 8, Henrietta St., Covent Gdn. B.A. Cantab., M.B. Lond.

w 1882-3. 1st Year Student, 1st Entrance Science Scholarship, 1st Coll. Prize.

w 1883-4. 2nd Year Student, Prosector's Prize.  
A.H.S.

- DUNCAN, W. (1876). 6, Harley St., Cavendish Sq. M.R.C.P. Lond., M.D. Brux., F.R.C.S.; Obstetric Physician to, and Lecturer on Obstetric Medicine and Practical Midwifery at, Middlesex Hospital. Sen. Phys. Chelsea Hospital for Women. Examiner in Midwifery, Examining Board in England.  
w 1876-7. 1st Year Student, The William Tite Scholarship.  
s 1877. 1st Coll. Prize.  
w 1877-8. 2nd Year Student, The Musgrove Scholarship;  
2nd Year Physical Society's Prize.  
s 1878. 1st Coll. Prize.  
w 1878-9. 2nd Tenure Musgrove Scholarship; 1st Coll. Prize;  
3rd Year Physical Society's Prize;  
Grainger Testimonial Prize.  
1880. 4th Year Student, The Cheselden Medal;  
The Treasurer's Medal.  
w 1881-2. The Solly Medal and Prize.  
H.S., R.A.
- DUNN, E. D. (1883). Brightwater, Nelson, New Zealand.
- DUNN, J. E. (1878). 24, Stephenson Terrace, Preston, Lanc.
- DUNSTAN, W. R., 3, Percy Villas, Campden Hill, M.A., Oxon, F.R.S. Lecturer on Chemistry.
- DURANT, R. J. A. (1876). Surg.-Capt. Army.
- DURRANT, C. E. (1891). St. Thomas's Hospital.  
Clin. Asst. Ear Dept.
- DURRANT, T. A. (1883). Northampton Road, Market Harborough, Leic.  
Clin. Asst. Skin Dept.
- DURSTON, J. C. (1888). 67D, Upper Tulse Hill. Surg. R.N.
- DUTTON, A. S. (1884).
- DYBALL, B. (1890). Gatton Lodge, Reigate.  
w 1891-2. 1st Year Student, 1st College Prize.  
w 1894-5. 4th Year Student, The Cheselden Medal.  
1896. Beanev Scholarship.  
A.H.S., Clin. Asst. Ear Dept.
- DYKE, T. J. (1836). Merthyr-Tydvil. F.R.C.S.
- EARLE, H. E. L. (1878). Surg. R.N. (retired).
- EASTON, T. (1883). Hanover House, Stranraer, Wigtownshire. M.A., M.D., C.M. Edin.
- ECCLES, C. H. (1883). Nether Penns, Nafferton, Yorks.  
w 1884-5. 2nd Year Student, 1st Coll. Prize.  
s 1885. 2nd Year Student, 1st Coll. Prize.  
w 1885-6. 3rd Year Student, 1st Coll. Prize.  
s 1886. 3rd Year Student, 1st Coll. Prize.  
H.P.
- ECCLES, R. B. (1885). Great Driffeld, Yorks.
- EDDOWES, J. H. (1842). Burleigh Fields, Loughborough, Leic. M.D. Glasg.  
1843. Comparative Anatomy, Prize.  
1844. Clinical Medical Reports, Silver Medal.  
1845. Clinical Medicine, Prize.
- EDDOWES, W. D. (1844). Stamford, Linc. Cons Surg. Stamford Infirm.  
1845. Descriptive and Surgical Anatomy, Prize.
- EDDOWES, W. D., Jun. (1877). 65, Lichfield Street, Hanley, Staffs.
- EDGE, F. Oakfield, Compton Road, Wolverhampton. M.D., B.S., B.Sc. Lond.; F.R.C.S., M.R.C.P.
- EDISS, G. N. (1836). 127, Church Street, Pendleton, Manchester.
- EDMONDS, C. G. (1862). Manor House, Manor Park, Streatham.
- EDMUNDS, W. (1871). 75, Lambeth Palace Road. M.A., M.B., M.C. Cantab.; F.R.C.S. Res. Med. Off. St. Thos. Home.  
H.P., R.A., H.S.
- EDWARDS, F. W. (1887). Camp Field, Overhill Road, Forest Hill.
- EDWARDS, V. (1842). The Villa, Shotisham, Woodbridge, Suffolk (retired).
- EDYE, J. S. (1880). Surg.-Capt. Army.
- ELLIOTT, J. W. (1854). 5, Manor Road, Forest Hill (retired).  
Late Surg. Dentist.
- ELLIS, H. H. (1880). Carbis Water, Lelant, Cornwall.
- ELLIS, J. (1854). Cobourg St., Fratton, Portsmouth, and Anaheim, Los Angeles Co., California. M.D. Brux.; M.R.C.P.I.  
H.S.
- ELLIS, R. K. (1884). Westgate, Peterborough. B.A., M.B., B.Ch. Oxon. Jun. and Sen. Obst. H.P.
- ELLIS, W. C. (1884). Tollerton, Easingwold, Yorks.
- ELWIN, C. J. (1853). 6, City Road.

- EMBLETON, D. (1833). 10, Claremont Place, Newcastle-on-Tyne. M.D. Durh., M.D. Pisa, F.R.C.P. Cons. Phys. Newc. Ry. Infirm.
- EMIN, M. (1891). M.B., C.M. Edin.
- EMSON, A. (1869). Dorchester.
- ENGLAND, G. F. A. (1883). 12, Southgate Street, Winchester. B.A., M.D., B.C. Cantab.
- ETHERIDGE, C. (1860). Seasalter, Whitstable, Kent.
- EVANS, J. T. (1825). Upton House, Fore St., Hertford. M.D. St. And.
- EVE, R. W. (1851). 101, Lewisham High Road. M.B. Aberd.
- EVELYN, W. A. (1882). 24, Mickle-gate, York. M.A., M.D. Cantab.
- FAIRBAIRN, J. S. (1893).
- FAIRBANK, J. (1864). 18, George St., Hanover Square.  
1866. 2nd Year Student, Prosector's Prize.
- FARRANT, S. (1857). North Street House, Taunton.
- FAULDS, H. (1886). 141, Duke St., Fenton, Stoke-on-Trent.
- FAWSSETT, F. (1882). 83, High Street, Lewes, Sussex. M.B., B.S. Lond.  
w 1883-4. 1st Year Student, 2nd Entrance Science Scholarship. The William Tite Scholarship.  
s 1884. 1st Year Student, 1st Coll. Prize.  
w 1884-5. 2nd Year Student, The Musgrove Scholarship.  
w 1885-6. 3rd Year Student, 2nd tenure of Musgrove Scholarship, with 3rd Coll. Prize.  
w 1886-7. 4th Year Student, The Cheselden Medal, Treasurer's Gold Medal.  
R.A., H.S., A.H.S.
- FAWSSETT, R. (1887). Surg.-Lt. Army.
- FELL, W. (1877). Wellington, New Zealand. M.D. Oxon.  
H.P., A.H.P., A.H.S., R.A.
- FENTON, H. A. H. (1875). 1, Cumberland St., Pimlico. M.D. Brux.  
w 1875-6. 1st Entrance Science Scholarship.  
s 1876. 1st Year Student, 1st Coll. Prize.
- FENWICK, P. C. (1889). 29, Harley Street. M.B. Lond.  
Sen. and Jun. Obst. H.P.
- FERNANDES, A. S. Bangalore, India. M.R.C.P. Edin.
- FERNIE, W. T. (1850). The Nook, Great Malvern. M.D. Durham.  
R.A.
- FIELDING, J. (1868). Bethel Street, Norwich. M.D. Vict. Univ. Canada.  
R.A.
- FINCHAM, W. S. (1884). 53, Kew Bridge Road, Brentford, Middlx.
- FINUCANE, M. I. (1881). Fiji.
- FISH, C. E. (1889). B.A., M.B., B.C. Cantab.
- FISHER, J. (1888). Surg.-Lt. I.M.S. Bengal. B.A., M.B., B.C. Cantab. Ophth. H.S.
- FISHER, J. H. (1886). 34, Queen Anne Street. M.B., B.S. Lond., F.R.C.S. Junior Demonstr. of Anat. Asst. Ophthalmic Surgeon.  
w 1887-8. 1st Year Student, The William Tite Scholarship.  
s 1888. 1st Year Student, 1st Coll. Prize.  
w 1888-9. 2nd Year Student, The Musgrove Scholarship.  
w 1889-90. 3rd Year Student, 2nd tenure of Musgrove Scholarship, with 1st Coll. Prize.  
s 1890. 3rd Year Student, 1st Coll. Prize.  
w 1890-1. 4th Year Student, Treasurer's Gold Medal.  
Sen. and Jun. Obst. H.P., H.S., A.H.S., Clin. Asst. Ear Dept., Ophth. H.S.
- FISHER, T. (1872). Mulberry House, Gt. Eccleston, Garstang, Lanc.  
s 1873. 2nd Year Student, 2nd Coll. Prize.  
w 1874. 2nd Year Student, 3rd Coll. Prize.  
w 1875. 3rd Year Student, Surgery and Surgical Anatomy, Prize.
- FISHER, T. E. H. (1885). 272, Wightman Road, Hornsey.
- FITZGERALD, G. C. (1882). Med. Superint. Kent Co. Asyl., Chartham Down, Canterbury. M.D., B.C. Cantab.
- FITZGERALD, W. A. (1879). Monte Carlo, Monaco. A.B., M.D. Dublin.; F.R.C.S.I.
- FITZ-HENRY, G. W. (1880). Amberley, North Canterbury, New Zealand.
- FLEGG, F. A. M. (1886). 10, Belsize Square, Hampstead.
- FLETCHER, G. (1869). 60, Southwood Lane, Highgate. B.A., M.D. Cantab.
- FLETCHER, T. B. E. (1836). 8, Clarendon Cresc., Leamington (retired). B.L. Paris; M.D., F.R.C.P., J.P., Cons. Phys. Birm. Gen. Hosp.
- FLETCHER, W. B. (1859). Fleet Surg. R.N. (retired).
- FLOYER, F. A. (1880). Mortimer, Berks. B.A., M.B. Cantab.  
Demonstr. of Pract. Surg.
- FOLEY, C. N. (1878). Beechcroft, 18, Tyson Rd., Forest Hill.
- FONMARTIN, H. de (1875). Vue, Loire Intérieure, France. M.D. Paris.

- FOOKS, W. P. (1888). Asst. Med. Superint. The Infirmary, Harrow Road, Paddington. M.A., M.B., B.C. Cantab. H.P.
- FOOTNER, E. (1855). Brig. Surg. Army (retired). M.D., C.M. Aberd.
- FORD, A. V. (1872). South View Lodge, Kent Rd., Southsea.
- FORD, T. A. V. (1880). Haileybury College.
- FORDE, T. A. M. (1885). 49, Park Road, West Dulwich. H.S., A.H.S., Clin. Asst. Skin and Throat Depts.
- FORRESTER, W. (1894). Lahore, Punjab, India.
- FORSTER, H. B. (1878). Ferrars Place, Albert Park, Melbourne, Victoria, Australia.
- FORT, T. (1873). Falcon House, King St., and 31, Rochdale Rd., Oldham.
- FORWARD, F. E. (1884). Antigua, W. Indies. F.R.C.S. H.P., Ophth. H.S.
- FOURACRE, R. P. (1859). 58, Tollerinton Park, Holloway.
- FOWLER, F. (1883). Minchinhampton, Stroud, Glouc.
- FOWLER, REV. J. T. (1853). Bp. Hatfield's Hall, Durham, and Winterton, Doncaster (retired). M.A., D.C.L. Durh. H.S.
- FOXWELL, A. (1877). 22, Newhall Street, Birmingham, and Northfield Grange, nr. Birmingham. Physician, Queen's Hospital, Birmingham. B.A. Lond.; M.A., M.D. Cantab.; F.R.C.P. H.P.
- FRANCIS, G. P. (1874). The Bulwark, Brecon.
- FRANKLIN, G. C. (1866). 39, London Road, Leicester. F.R.C.S. H.S., R.A.
- FRASER, D. H. (1889). Colsterworth.
- FRASER, D. (1877). Peterborough, Ontario, Canada.
- FRASER, H. (1884). Bank House, Slough.
- FRAZER, W. D. (1890). St. Thomas's Hospital. A.H.S., Clin. Asst. Electr. Dept.
- FREDERICK, H. J. (1887). Kornthal, Sidcup, Kent. Clin. Asst. Throat and Ear Depts.
- FREEMAN, A. J. (1861). 46, Brook St., and San Remo, Italy. M.D. Aberd. Asst. Res. Med. Off.
- FREEMAN, D. (1857). 218, Marylebone Road. 1859. Clinical Medicine, Prize.
- FREEMAN, E. C. (1879). Surg.-Capt. Army.
- FREEMAN, W. H. (1840). 21, St. George's Square, Pimlico (retired).
- FROHWEIN, O. F. (1880). 181, High Street, Burton-on-Trent.
- FULLER, A. L. (1888). 1, Montpelier, Lansdown Road, Bath.
- FULLERTON, F. W. (1887). 79, Prospect Street, Hull. M.B., B.S. Durh.
- FURNIVAL, F. H. (1878). Auburn, S. Australia. w 1878-9. 1st Year Student; The Wm. Tite Scholarship.
- GARBETT, P. C. (1887). Surg.-Capt. I.M.S., Madras.
- GARDENER, W. F. (1884). Darley House, Venner Road, Sydenham.
- GARNER, J. (1888).
- GARTON, W. (1869). Inglewood, Aughton, Ormskirk. M.D., C.M. Edin.; F.R.C.S. 1870. 2nd Year Student, 2nd Coll. Prize: Physical Society's 2nd Year's Prize. 1871. Physical Society's 3rd Year's Prize. H.P., H.S., R.A.
- GAUSSEN, D. P. (1884). The Hill, Dunmurry, co. Antrim. M.D., R.U.I.
- GEDGE, A. S. (1886). Asst. Med. Off. Co. Asyl, Maidstone, Kent.
- GENGE, G. G. (1890). George Street, Croydon. M.B. Lond. w 1890-1. 1st Year Student, 1st Coll. Prize. s 1891. 1st Year Student, 1st Coll. Prize. w 1891-2. 2nd Year Student, The Peacock Scholarship. w 1892-3. 3rd Year Student, 2nd Tenure of Peacock Scholarship, with 1st Coll. Prize. w 1893-4. 4th Year Student. The Mead Medal; The Treasurer's Gold Medal. H.P., Obst. H.P., Clin. Assist. Ear and Skin Depts.
- GEORGE, A. W. (1888). 1, Burton Road, Brondesbury. M.B., C.M. Edin.



- GEORGE, C. F. (1854). Kirton-in-Lindsey, Linc.  
1856. 2nd Year Student, Dr. Root's Prize.  
1857. Surgery and Surgical Anatomy, Cheselden Medal.  
H.S.
- GEORGE, H. (1882). Innisfail, Alberta, Canada. M.D. St. And.
- GERVIS, A. F. (1884). 1, Queen's Crescent, Haverstock Hill.
- GERVIS, F. H. (1860). 1, Fellows Road, Haverstock Hill.  
1861. 1st Matriculation Scholarship—Coll. Prize, 2nd College Prize.  
1862. 2nd Year Student, 1st Coll. Prize.  
H.S., R.A.
- GERVIS, F. H. (1891).
- GERVIS, H. (1855). 40, Harley Street, and The Beeches, Cowley, Uxbridge. M.D. Lond., F.R.C.P. Consulting Obstetric Physician to St. Thomas's Hospital, and to the Royal Maternity Charity.  
1856. 1st Year Student, Treas. 1st Prize; Matriculation Examination, Physics, &c., Prize.  
1857. 2nd Year Student, President's Prize; Physical Society's Essay, Prize.  
1858. Clinical Assistant (Medicine), 2nd Prize; Physical Society's Essay, Prize; General Proficiency, Treas. Medal.  
Obstetric Physician. Lecturer on Midwifery and Diseases of Women and Children.
- GERVIS, H. (1884). Windhill Place, Bishops Stortford, Herts. M.A., M.B., B.C. Cantab.  
H.S., A.H.S., R.A.
- GIBBS, A. N. G. (1879). 52, Whiteladies Road, Clifton, Bristol.
- GIBSON, W. A. (1888).
- GILBERT, H. P. (1873). Aston Clinton, Tring.
- GILDER, S. E. A. (1875). The Limes, Mount Pleasant, Hastings.
- GILES, F. W. (1873). Hotel Continental, Cannes, France. M.B. Durh.
- GILL, J. (1872). 24, Pembroke Road, Clifton, Bristol. M.D. Brux.
- GILLAM, J. B. (1888). Holt, Norfolk. B.A., M.B., B.C. Cantab.
- GILLARD, C. R. (1872). 879, Dorchester Street, Montreal, Canada.
- GILMOUR, J. H. (1870). Hurst Lodge, Hurstbourne - Tarrant, Andover, Hants.
- GIMLETTE, G. H. D. (1873). Surg.-Major Bengal Army. M.D., M.Ch. R.U.I.  
w 1876-7. Physical Society's 3rd Year's Prize.  
H.P., R.A., H.S., A.H.S.
- GIMLETTE, J. D. (1885). Selingseng, Pahang, Malay Peninsula.
- GIMLETTE, T. D. (1874). Fleet Surg. R.N.
- GIRDLESTONE, H. E. (1886). 5, Haycroft Road, Brixton.
- GODDARD, B. (1885). 27, Pentonville Road, and 106, Highbury New Park.
- GODDARD, E. (1859). North Lynn, 106, Highbury New Park. M.D. Durh.  
1860. Matriculation Examination, Classics, &c., Prize.
- GODFREY, A. E. (1881). Lansdowne, 1, Woodside Park Road, North Finchley. M.B. Lond.  
s 1883. 2nd Year Student, 2nd Coll. Prize.  
w 1883-4. 3rd Year Student, 2nd Coll. Prize.  
H.P., A.H.P., R.A.
- GODFREY, H. J. C. (1878). 7, Manor Street, Bridlington Quay, Yorks.
- GODFREY, T. H. (1882). Stockton-on-Tees. M.B. Durh.; D.P.H. Cantab.
- GOLDSMITH, J. (1854). Lee-on-the-Solent, Gosport, Hants. M.D. St. And.
- GOOD, J. W. (1877). Winnipeg, Canada.
- GOODY, E. S. (1881). Kimberley, South Africa. F.R.C.S.  
w 1882-3. 2nd Year Student, 3rd Coll. Prize.  
s 1883. 2nd Year Student, 1st Coll. Prize.  
H.S., A.H.S., A.H.P.
- GOODHUE, F. W. J. (1888). 13, Old Quebec Street. B.A. Cantab.
- GORDON, B. (1881). Snake's Lane, Woodford, Essex.
- GORNALL, J. G. (1888). Ribblesdale, Latchford, Chesh. M.A., M.B., B.C. Cantab.
- GORST, H. (1878). Huyton, Liverpool.
- GOULSTON, A. (1877). 2, Homefield Place, Heavitree, Exeter. M.A. Cantab.
- GOVER, H. J. (1875). Littlebury, Saffron Walden, Essex. M.A., M.B. Cantab.
- GOVER, L. D. (1884). 30, Bernard St., Russell Square.
- GRABHAM, G. W. (1854). Mathyns, Witham, Essex. M.D. Lond.; M.R.C.P.  
1855. Matriculation Scholarship.

- GRABHAM, M. (1888). Barbados, W. Indies. M.B., B.C. Cantab.
- GRABHAM, M. C. (1858). Madeira. M.D. Aberd.; F.R.C.P. Lond. H.S.
- GRANT, J. W. G. (1884). 7, Old Burlington Street.
- GRANT-WILSON, C. W. (1887). Heathfield House, Streatham Common. Obst. H.P.
- GRAY, C. (1855). Surg.-Maj. Army (retired).
- GRAYDON, A. (1886). 124, Cornwall Road, Notting Hill.
- GREAVES, C. A. (1860). 84, Friar Gate, Derby. M.B., LL.B. Lond.; A.A. Oxon.  
 1861. 1st Year Student, Treasurer's Prize.  
 1862. 2nd Year Student, 2nd Coll. Prize; Physical Society's Prize.  
 1863. 3rd Year Student, 1st Coll. Prize; Physical Society's Prize; Cheselden Medal.  
 H.S., R.A.
- GREAVES, H. (1888). Hankelow, Audlem, Chesh. B.A., M.B., B.C. Cantab.
- GREEN, A. (1886). 1, Walker Terr., Gateshead-on-Tyne. M.B. Durh.
- GREEN, C. D. (1879). Addison House, Upper Edmonton. M.D., B.S. Lond.; F.R.C.S. Eng.  
 w 1879-80. 1st Year Student, The Wm. Tite Scholarship.  
 s 1880. 3rd Coll. Prize.  
 w 1880-1. 1st Coll. Prize.  
 s 1882. 1st Coll. Prize.  
 H.S., A.H.S., H.P., A.H.P., R.A.
- GREEN, E. C. (1877). 27, Friar Gate, Derby.
- GREENE, F. W. (1852). Isipingo, Durban, Natal.
- GREENFIELD, W. S. 7, Heriot Row, Edinburgh. M.D., F.R.C.P. Lond.; F.R.C.P. Edin.; F.R.S.E.; Prof. of Path. and Clin. Med. Univ. Edin. Assist. Phys., Med. Registr. and Lect. on Path. Anat.
- GREENWOOD, J. W. (1867). Peel House, Hanley, Staffs. M.D. St. And.
- GREGORY, S. (1880). Hadfield House, Birschanger Road, South Norwood.
- GRESSWELL, G. (1889). 131, Victoria St., Gt. Grimsby, Linc. M.A. Oxon.; M.A. Cape of Good Hope.
- GRIEVE, W. D. (1885). 47, Buccleuch St., Dumfries. M.B., C.M. Edin.
- GRIFFITH, A. L. (1856). 606, Harrow Road. M.D. St. And.
- GRIFFITH, W. S. (1886). Kimberley, Cape Colony. M.B., B.C. Cantab.; F.R.C.S.  
 H.S., Clin. Asst. Skin Dept.
- GRIFFITHS, F. A. Ingleton, Lancaster, Yorks.
- GRIMBLY, R. Summertown, Oxford (retired).
- GRIMBLY, R. H. (1872). Newton Abbot, S. Devon.
- GROOME, W. W. (1876). 3, Wyburn Villas, Surbiton Hill. B.A., M.D. Cantab.  
 H.P., A.H.P.
- GROSE, S. (1856). Valetta, Thurlow Road, Torquay. M.D. St. And.; F.R.C.S.
- GRÜNBAUM, A. S. F. (1887). 45, Ladbroke Grove. M.A., M.B., B.C. Cantab.; M.R.C.P.  
 1893. Grainger Testimonial Prize.  
 H.P., Clin. Assist. Skin Dept.
- GURNEY, H. (1880). Stour House, Dovercourt, Essex.
- GURNEY, R. A. F. (1848). Thame, Oxon.  
 1851. Practical Midwifery, Prize.
- GWYNN, R. H. (1872).
- HACON, E. D. (1836). 269, Mare St., Hackney. F.R.C.S.
- HAGUE, J. T. (1874). 320, Brixton Road.
- HAGUE, S. (1862). 325, Southampton Street, Camberwell. LL.B. Lond.; M.D. St. And.  
 1863. 1st Year Student, 2nd Coll. Prize. Medical Registrar.
- HAIG, F. M. (1882). 2, Warwick Row, Coventry. M.A., M.D., B.C. Cantab.  
 H.P.
- HAIG-BROWN, C. W. (1877). Dean Lodge, Godalming, Surrey. M.D., C.M. Aberd. Med. Off. Charterhouse Sch.  
 s 1878. 1st Year Student, 2nd Coll. Prize.  
 w 1878-9. 2nd Year Student, 2nd Coll. Prize.  
 w 1880-1. The Cheselden Medal.  
 H.P., A.H.P., H.S., A.H.S.
- HAINES, A. (1886). St. Just, Tenbury, Worc.
- HAINES, E. (1890). Ranghmere, Lavant, Chichester.

- HAIRNORTH, E. M. (1888). Royal Infirmary, Hull. M.B., B.S., B.Sc. Lond., F.R.C.S.
- w 1888-9. 1st Year Student, 1st Entrance Science Scholarship.
- s 1888. 1st Year Student, 2nd Coll. Prize.
- w 1890-1. 3rd Year Student, 1st Coll. Prize.
- s 1891. 3rd Year Student, 1st Coll. Prize.
- H.S., A.H.S., H.P.
- HAIRSINE, H. (1872). Roose House, Upp. Tooting.
- HAKIM, H. M. (1880). Surg.-Maj. I.M.S., Madras.
- HALL, J. B. (1892). General Infirm., Leeds. M.A., M.B., B.C. Cantab.; Res. Casualty Off. Gen. Infirm. Leeds.
- HALL, J. L. (1873). Surg.-Maj. Army.
- HALL, R. D. G. (1873). The Lilacs, Arundel Road, Littlehampton, Sussex.
- HALL, R. H. (1890). De Grey Lodge, Woodhouse Lane, Leeds. M.A., M.B., B.C. Cantab.
- HALL, S. H. (1894). 3, Crescent, Carlisle. M.B., C.M. Edin.
- HALLILAY, R. P. (1887). 26, Moorland Road, Leeds.
- HALLIWELL, T. O. (1889). Blagdon, Bristol.
- Clin. Asst. Throat Dept.
- HAMERTON, G. A. (1869). 3, Southampton St., Covent Gdn. M.D. Brux.; F.R.C.S. Eng. D.P.H.
- HAMMOND, J. H. (1847). 11, Winckley Square, Preston, Lanc. M.D. Aberd.; M.R.C.P., J.P.
1850. Medical Cases, President's Prize.
- HANBURY, W. R. (1889). County Asylum, Dorchester.
- HANLY, E. (1886). Buenos Ayres, Argentine Republic. M.D., M.Ch. R.U.I.
- HANNAH, F. R. (1882). 66, Jackson Road, Holloway.
- HANSON, J. (1877). Adelaide, South Australia.
- HANWELL, G. L. (1888). 5, Criffild Road, Ealing.
- HARCOURT, G. R. (1888). Asst. Med. Off. Lambeth Infirmary.
- Clin. Asst. Skin Dept.
- HARCOURT, J. C. (1891). Woodford Green.
- w 1891-2. 1st Year Student, The Wm. Tite Scholarship.
- s 1892. 1st Year Student, 2nd College Prize.
- s 1893. 2nd Year Student, 1st College Prize.
- s 1894. 3rd Year Student, 1st College Prize.
- HARDING, H. W. (1889). 24, Park Place, Greenwich.
- H.S., A.H.S.
- HARDING, J. A. (1857). Osman House, Fortis Green, E. Finchley.
1859. Clinical Medicine, 2nd Prize.
1860. Clinical Assistant (Medicine), 1st Prize.
- HARDYMAN, C. E. (1866). Hill House, Bramerton, Norwich. M.D. Durh.; F.R.C.S.
- H.S.
- HARE, E. H. (1872). 46, Weston Park, Crouch End. M.A. Oxon.; F.R.C.S. Eng.
- A.H.P.
- HARFORD-BATTERSBY, C. F. (1887). 14, Earlham Grove, Forest Gate. M.A., M.D., B.C. Cantab.
- HARLEY, J. 9, Stratford Place, W. M.D., F.R.C.P. Lond.; Cons. Phys. St. Thos. Hosp.; Cons. Phys. Lond. Fev. Hosp.
- HARMAN, L. (1889). Shalmsford, Brixton Hill. M.B. Durh.
- HARPER, J. (1889). Rondweni, British Zululand.
- HARPER, J. R. (1886). Bear Street, Barnstaple, Devon.
- H.S., A.H.S., R.A., S.O.C.
- HARPER, R. (1842). 18, Park Road, West Dulwich (retired). J.P.
1845. Physical Society's Essay, Prize; Dresser's Clinical Surgery, Prize.
- HARPER, R. R. (1872). Holbeach, Linc.
- HARPER, W. J. (1887). Bloomfield, Branton, N. Devon.
- HARRIS, F. A. (1874). Surg. Maj. Army.
- HARRIS, J. E. (1887). 46, Marsham Street, Westminster. B.A., D.Sc. Lond.
- w 1887-8. 1st Year Student, 1st Entrance Science Scholarship.
- HARRIS, J. B. (1864). 32, St. David's Road, Southsea. M.D. Durh.
- HARRIS, W. (1865). Res. Med. Supert. Norwich City Lunat. Asyl., Hellesdon, Norwich. F.R.C.S., M.R.C.P. Edin.

- HARRIS, W. J. (1881). 34, Wellington Square, Hastings.
- HARRIS-BICKFORD, A. (1855). Veor Villa, Camborne, Cornwall. M.D. St. And.
- HARRISON, A. (1878). 52, Coombe Road, Teignmouth, Devon.
- HARRISON, H. M. (1889). Beech House, West Ayton, York. B.A. Cantab.
- HARTLEY, H. (1878). Stone, Staffords.
- HARTNOLL, H. T. (1843). 35, East Southernhay, Exeter. H.S.
- HARVEY, E. (1877). Hamilton, Bermuda, W. Indies.
- HARVEY, S. F. (1875). 117A, Queen's Gate, South Kensington.
- HARVEY, T. (1863). 6, Montague Place, Poplar.
- HASLAM, J. N. (1833). Niel Lodge, Dagnall Pk., Selhurst.
- HASLAM, W. F. (1874). 33, Paradise St. Birmingham, and 24, York Road, Edgbaston. F.R.C.S., Demonstr. of Anatomy Mason Coll. Birmingham, Surgeon Birmingham General Hospital. Late Examiner in Elementary Anatomy, Conjoint Board.  
s 1876. 2nd Year Student, 1st Coll. Prize.  
w 1877-8. The Cheselden Medal.  
Demonstrator of Anatomy, H.P., A.H.P., H.S., A.H.S., R.A.
- HATCHETT, F. W. (1879). 6, Upper Cheyne Row, Chelsea.
- HATHAWAY, C. (1836). 11, Edward Road, St. Leonards-on-Sea. M.D. Aberd.
- HATHERELL, R. R. (1884). Hatch Beauchamp, Somers. M.A. Cantab.
- HATTON, G. S. (1875). Hanover House, Newcastle - under - Lyme. M.D., M.S. Durh.; F.R.C.S. Edin.  
w 1876-7. 2nd Year Student. Prosector's Prize.  
H.P., A.H.P.
- HAVILAND, A. Douglas, Isle of Man.  
Late Lect. on Geography of Disease.
- HAWARD, H. H. (1890). Chattisham Hall, Ipswich. B.A., M.B., B.C., Cantab.  
Clin. Asst. Skin Dept.
- HAWKINS, H. P. (1882). 109, Harley Street, Cavendish Square. M.A., M.D. Oxon., F.R.C.P., Asst. Phys. to, Demonstr. of Morbid Anatomy and Lecturer on Pathology at, St. Thos. Hosp. Dean of Med. School.  
w 1882-3. 1st Year Student, The William Tite Scholarship.  
w 1883-4. 2nd Year Student, The Peacock Scholarship.  
w 1884-5. 3rd Year Student, 2nd tenure of Peacock Scholarship and 1st Coll. Prize.  
Res. Asst. Phys., H.P., A.H.P., Radcliffe Travelling Fellow, Oxford, 1886.
- HAWKINS, W. (1870). The Vicarage, Abbotsbury, Dorchester.
- HAYASHI, K. (1892). Tokyo, Japan.
- HAYDON, T. H. (1888). Marlborough. B.A., M.B., B.C. Cantab.  
H.S., A.H.S., Obst. H.P. and Demonstr. of Pract. Surg.
- HAYMES, H. E. (1891).
- HAYWARD, J. (1857).
- HEATHER, B. G. (1886). Surg. R.N.
- HEAVEN, J. C. (1879). 17, Whiteladies Road, Clifton, Bristol. D.P.H., Lect. on Hygiene S. Kensington, and Demonstr. of Hygiene Univ. Coll. Bristol.
- HEELIS, R. (1876). Church Street, Lenton, Nottingham. M.D. Durh.  
s 1877. 1st Year Student, 2nd Coll. Prize.  
s 1878. 2nd Year Student, 2nd Coll. Prize. A.H.P.
- HEFFERNAN, H. H. (1883). The Grove, Caldicot, Mon.  
w 1883-4. 1st Year Student, 2nd Coll. Prize.
- HEFFERNAN, W. H. (1881). 100, Broomwood Road, Wandsworth Common.
- HEIN, G. G. B. (1884). Bellefield House, Wakefield.
- HELISHAM, H. P. (1882). Beccles, Suffolk.
- HELISHAM, W. M. (1882). Richmond, New South Wales.
- HEMINGWAY, J. (1885). Salisbury House, Clapton Square.
- HENDERSON, W. D. (1884). 2, Bank Buildings, Kingswood, Bristol.
- HENRY, R. (1885). Surg. P. & O.
- HENSLOWE, F. W. D. (1871). Elm Tree Villa, Victoria St., Dunstable, Beds.
- HENTSCH, J. P. (1870). 174, Stockwell Road, Brixton.
- HERBERT, W. (1890).
- HERSCHELL, G. (1874). 27, Queen Anne Street. M.D. Lond.



- HEWAN, J. (1880). Cinnamara P.O., Jorhât, Upp. Assam, India.
- HEWETT, J. W. (1888). Medical Missionary, China Inland Mission, Pingyang, Shansee. A.H.S.
- HEYGATE, F. N. (1874). The Elms, Wisborough Green, Billingshurst.
- HEYGATE, W. N. (1861). 12, Bennett Street, Bath. R.A.
- HEYWOOD, C. C. (1887). Irlams-o'-th'-Height, nr. Manchester. M.A., M.B., B.C. Cantab.  
s 1888. 3rd Year Student, 2nd Coll. Prize  
Clin. Asst. Throat Dept.
- HICHENS, P. S. (1892). St. Thomas's Hospital. B.A., M.B., B.Ch. Oxon.  
w 1893-4. 3rd Year Student, 1st College Prize.  
H.P.
- HICKS, Rt. Rev. J. W. (1858). Bloemfontein, Orange Free State. M.D., F.R.C.P.  
1859. 1st Year Student, Treasurer's 1st Prize.  
1860. 2nd Year Student, 1st Coll. Prize;  
Physical Society's Prize.  
1861. 3rd Year Student, 1st Coll. Prize;  
Physical Society's Prize;  
Cheselden Medal;  
Treasurer's Gold Medal.
- HICKS, T. W. (1887). Park House, East Finchley. M.B. Lond.  
H.P., Obst. H.P., Clin. Asst. Throat Dept.
- HIGHTON, T. (1869). Green Hill House, Normanton Road, Derby. H.P.
- HILDYARD, N. (1879).
- HILEY, R. F. (1884). Pilley's Island, Notre Dame Bay, Newfoundland.
- HILL, D. P. S. (1892). Larne, co. Antrim. M.B., B.Ch., B.A.O., R.U.I.
- HILL, E. B. (1883). Longfleet, Poole, Dorset. B.A., M.B., B.C. Cantab.
- HILL, R. A. L. (1890). The General Infirmary, Chichester.
- HILLIAM, W. P. (1893). c/o Capt. Hilliam, Spalding, Linc.
- HILLYER, W. H. (1882). Ellerslie, Buckden, Hunts.
- HINNELL, J. S. (1882). 62, Garland Street, Bury St. Edmund's. B.A., M.D., B.C. Cantab.  
Ophth. Asst.
- HITCHCOCK, H. K. (1866). Christowell, Branksome Park, Bournemouth. M.D. Brux.; J.P.
- HOAR, C. (1879). The Grove, Robertsbridge, Sussex. M.B., C.M. Aberd.
- HOBHOUSE, E. (1884). M.D., B.Ch. Oxon.; M.R.C.P.  
w 1885-6. 3rd Year Student, 2nd Coll. Prize.  
H.P., A.H.S.
- HOCKRIDGE, T. G. (1879). 27, Tysoe St., Wilmington Sq., M.D., C.M. McGill, Montreal.
- HODGES, H. B. (1853). Glenaveril, Knebworth, and Watton Cottage, Watton, Herts.
- HODGES, H. C. (1878). Watton, Herts.
- HODGSON, C. (1887). House Surg. Co. Hosp. York.
- HODGSON, W. (1871). Gatefield House, Crewe, Chesh.
- HODSON, T. (1858). Ingatestone, Essex.
- HOLBERTON, H. N. (1876). Chetwynd, Palace Road, East Molesey, Surrey. D.P.H.  
w 1876-7. 2nd Entrance Science Scholarship, and 2nd Coll. Prize.  
w 1877-8. 2nd Year Student, 1st Coll. Prize.  
A.H.P.
- HOLDING, C. (1829). 121, Victoria St., Westminster. F.R.C.S.
- HOLDSWORTH, S. (1834). Burneytops House, Wakefield. M.D. Pisa; M.R.C.P., J.P.
- HOLLAND, E. W. (1878). B.A. Cantab.
- HOLLOWAY, R. (1876). Edgecumbe House, Brockhurst, nr. Gosport.
- HOME, A. L. (1889). 153, Goldhurst Terrace, South Hampstead.  
w 1894-5 Bristowe Medal.  
H.S., A.H.S.
- HOOD, N. L. (1891). Castlegate House, York, B.A., M.B., B.C. Cantab.
- HOOPER, A. W. (1889). 275, Upper Richmond Road, Putney. A.M.S.
- HOOPER, J. H. (1857). Danemead, 275, Upper Richmond Road, Putney. M.D., M.S. Lond.; F.R.C.S.  
1859. 2nd Year Student, Coll. Prize.
- HOPE, G. (1881). Grosvenor House, Ealing Dean.
- HORLEY, W. L. (1851). Stanboroughs, Hoddesdon, Herts. (retired).
- HOUGH, C. H. (1875). Full St., Derby.
- HOUGH, J. (1836). Grange Road, Cambridge. F.R.C.S., J.P.
- HOUGHTON, L. (1873). 2, Sussex Square, Brighton

- HOULGRAVE, A. (1880). 23, Great George's Rd., Waterloo, Liverpool.
- HOUNSELL, F. C. W. (1881). The Fernery, Chudleigh, S. Devon. B.A. Cantab.
- HOUSE, F. M. (1883). Katauning, Western Australia.
- HOW, A. B. (1883). Stradbroke, Wickham Market, Suffolk.
- HOWELL, T. S. (1841). The Old Vicarage, Wandsworth.
- HOWSE, W. (1856). 8, London Street, New Swindon, Wilts.
- HUBBARD, A. J. (1876). Durrance House, Hemel-Hempstead, Herts. M.D. Durh.
- HUDSON, H. (1882). Mannargudi, Tanjore, S. India.
- HUDSON, J. S. (1888). House Physician Consump. Hosp., Brompton.
- HUDSON, O. H. (1881). Meersbrook Edge, Chesterfield Road, Sheffield.
- HUGHES, A. E. P. (1884). Camberwell Workhouse Infirmary. Ophth. H. S.
- HUGHES, R. (1889). Junr. Asst. Med. Off. Co. Asyl., Staff.
- HULBERT, H. H. (1884). 14, Cedar Gardens, Putney. B.A. Oxon. H.S., A.H.S., Clin. Asst. Throat and Ear Depts., Asst. Teacher of Pract. Surg.
- HULL, W. (1878). Cootamundra, N. S. Wales. M.D. Lond. w 1875-9. 2nd Entrance Science Scholarship. w 1881-2. The Mead Medal. H.P., A.H.P., H.S., A.H.S., R.A.
- HUME, F. H. (1860). 53, Devonshire Street, Islington. M.D. St. And.
- HUME, F. N. (1871). Med. Superint. Northern Hosp., Winchmore Hill.
- HUNT, J. A. (1872). Brookfield, Borrowash, Derbysh. w 1874. Prosector's Prize.
- HUNT, J. P. (1886). Surg.-Maj. Army. M.D. Glasg., F.R.C.S.I.
- HUNTLEY, L. (1842). 79, Freshfield Road, Kemp Town, Brighton.
- HUSKINSON, H. (1888). M.B. Durham. Surg. R.N.
- HUTCHINSON, J. A. (1883). Northalerton Yorks. M.D., M.S. Durh.
- HUTTON, H. R. (1875). 8a, St. John Street, Manchester. M.A., M.B. Cantab. Demonstr. of Physiol., Asst. Demonstr. of Pract. Path. and H.P.
- IDESON, J. J. (1857). The Poplars, Colne, Lancash.
- ILES, A. R. (1872). Shutterne House, Taunton, Somers.
- ILES, D. (1861). Fairford, Glouc.
- ILLINGWORTH, J. A. (1856). Brig.-Surg. Army (retired).
- INGLIS, W. W. (1863). Glendower, Queen Anne Av., Bromley, Kent. M.D. Heidelb. 1864. 1st Year Student, 2nd Coll. Prize. 1865. 2nd Year Student, 2nd Coll. Prize. 1866. 3rd Year Student, 3rd Coll. Prize; Cheselden Medal. Medical Registrar and H.S.
- IRVING, D. B. (1879). Vancouver, Brit. Columbia, Canada.
- ISAACS, E. P. (1885). House Surg. Seamen's Hospital, Greenwich. Ophth. H.S.
- IVES, R. (1854). Chertsey Lodge, Portsmouth, Southampton.
- JACKSON, J. (1868). 15, Huntingdon Street, Barnsbury.
- JAFFE, C. S. (1887). 138, Sutherland Avenue, Maida Vale. M.D., B.S. Lond. w 1887-8. 1st Year Student, Half 2nd Coll. Prize. H.P., Obst. H.P., Clin. Asst. Throat Dept. Salters' Company Research Fellow.
- JAMES, C. H. (1883). Surg.-Capt. Bengal Army. w 1887-8. Solly Medal and Prize. H.S., A.H.S., R.A.
- JAMES, F. C. (1889). 48, Tregunter Road, South Kensington.
- JAMES, J. M. (1885). 647, Queen's Road, Heeley, Sheffield.
- JAMES, S. (1886).
- JARDINE, J. L. (1846). Capel, Dorking, Surrey. 1850. Medical Reports, Dr. Roots' Prize. H.S.
- JARVIS, J. (1881). 38, Gay Street, Bath.
- JEFFERSON, A. J. (1874). 2, West St., Rochdale. M.D., B.S. Lond.
- JEFFERSON, T. J. (1860). Market Weighton, Yorks. M.D. Aberd. H.S.
- JEFFREYS, A. (1886). Giants' Grave, Briton Ferry, Neath, S. Wales.

- JEFFREYS, J. G. (1874). 24, Barrowgate Road, Chiswick. M.D. Durh.
- JEFFREYS-POWELL, J. P. (1874). Senny Bridge, Brecon, S. Wales.
- JENNER, L. L. (1890). St. Thomas's Hosp. M.A., M.B., B. Ch. Oxon.; M.K.C.P. Demonstrator of Morbid Histology and Bacteriology.  
s 1892. 3rd Year Student, 2nd Coll. Prize. H.P.
- JOHNS, W. S. (1871). Caterham Valley, Surrey.
- JOHNSON, C. G. (1869). Harpur Villa, Bedford.
- JOHNSON, W. G. (1852). 68, High Street, Bedford.  
1855. Comparative Anatomy, Prize.
- JOHNSTON, G. D. (1879). Georgia St., Vancouver, British Columbia, Canada.  
w 1882-3. 4th Year, Cheselden Medal. H.P., H.S., A.H.S., R.A., Ophth. Clin. Asst.
- JOHNSTON, T. (1878). Barnstaple, North Devon.
- JOLLY, S. B. (1879). Godstone House, West Hill, Sydenham. M.B. Cantab.
- JONES, A. O. (1861). Grange House, Bromley, Kent. M.D., C.M. Aberd.
- JONES, A. W. (1885). Godington Rectory, Bicester. M.A. Oxon.  
s 1888 3rd Year Student, 1st Coll. Prize.
- JONES, B. S. (1884). 16, Kendoa Road, Clapham.
- JONES, C. M. (1870). Glantaff House, Troedryhiw, Glamorg. R.A.
- JONES, E. (1855). Ty-mawr, Aberdare, Glam. J.P.
- JONES, E. J. T. (1880). Ty-mawr, Aberdare, Glamorg.
- JONES, H. T. (1886). Harlech House, Pembroke, S. Wales.
- JONES, J. T. (1870). Hornsea, Hull.
- JONES, R. W. (1864). 77, Vauxhall Bridge Rd.
- JONES, SYDNEY (1850). 40, Wimpole St., Cavendish Square. M.B. Lond.; F.R.C.S. Eng.; Consulting Surgeon to St. Thomas's Hospital.  
1851. Matriculation Scholarship, Prize; 1st Year Student, Scholarship.  
1852. 2nd Year Student, Scholarship. Descriptive Anatomy, Prize.  
1853. 3rd Year Student, Scholarship. Late Member of Council, Royal College of Surgeons. Late Surg., Lect. on Surg., on Descrip. Surg., Surg. Anat., Ophth. Surg. and on Comp. Anat., Cur. of Mus., Demonst. of Healthy and Morbid Anat. at St. Thos. Hosp.
- JONES, S. H. (1881). 40, Wimpole St., Cavendish Square. M.B., B.S. Lond.; F.R.C.S.  
w 1881-2. 1st Year Student, 1st Entrance Science Scholarship.  
The William Tite Scholarship.  
w 1882-3. 2nd Year Student, Half Musgrove Scholarship and 1st Coll. Prize combined.  
Prosecutor's Prize.  
w 1883-4. 3rd Year Student, 2nd tenure of Half Musgrove Scholarship, with 1st Coll. Prize.  
s 1884. 3rd Year Student, Half 1st and 2nd Coll. Prizes.  
w 1884-5. 4th Year Student, The Cheselden Medal.  
Treasurer's Gold Medal.  
H.S., A.H.S., Clin. Asst. Ear and Skin Depts.
- JONES, T. J. (1882). Newton Lodge, Welsh Newton, Monmouth, Hereford. B.A., Cantab., M.B., C.M. Edin.
- JONES, T. M. (1845). Kilby House, Loughor, Glamorg.
- JONES, W. W. (1877). Pinehurst, Barlow Moor Rd., Didsbury, Manchester. M.A., M.B. Oxon., B.Sc. Lond.  
w 1877-8. 1st Year Student; 1st Entrance Science Scholarship; £60;  
The William Tite Scholarship.  
w 1877-8. 1st Year Physical Society's Prize.  
s 1878. 1st Year Student, 1st Coll. Prize.  
w 1878-9. 2nd Year Student, The College Scholarship.  
s 1879. 2nd Year Student, 2nd Coll. Prize.  
w 1879-80. 3rd Year Student, 2nd tenure of Coll. Scholarship, and 1st Coll. Prize.  
w 1880-1. The Mead Medal; Treasurer's Gold Medal.  
H.P., H.S., A.H.S., R.A.; Radcliffe Travelling Fellow, Oxford, 1880.
- JOTHAM, E. (1843). 270, Camden Road.
- JOTHAM, E. S. (1855). 63, Roe St., Macclesfield.
- JOTHAM, G. W. (1870). Tolcarn, Kidderminster. M.D., C.M. Aberd.
- JULIUS, H. A. (1886). Surg. R.N.
- KAI, HO (1875). 3, Elgin St., Hong Kong, China. M.B., C.M. Aberd.
- KAKA, S. M. (1884). Karachi, India.
- KAPADIA, S. A. (1881). 40, Glazbury Road, W. Kensington. M.D. Brux.
- KAVANAGH, P. J. F. (1887).
- KEATES, W. C. (1869). 22, East Dulwich Road.
- KEELE, C. F. (1857). 3, Dyneham Rd., West Hampstead.

- KEELE, G. T. (1851). 81, St. Paul's Road, Highbury.
- KEELE, J. R. (1879). 8, Prospect Place, Southampton.
- KELLER, H. L. A. (1884). Elm House, Hornsey. B.A. Oxon.
- KELLOCK, T. H. (1886). 5, Lansdowne Place, Brunswick Square. M.A., M.D., B.C. Cantab.; F.R.C.S. w 1889-90. 4th Year Student: The Cheselden Medal.  
H.S., A.H.S., H.P.
- KEMPE, C. M. (1859). Chantry House, New Shoreham, Sussex.
- KENT, P. W. (1890). St. Thomas's Hospital.  
A.H.S., Clin. Asst. Ear Dept.
- KER, J. E. (1880). Asst. Surg., Colonial Hosp., Gibraltar.
- KERR, G. D. (1883). 14, Burlington Street, Kemp Town, Brighton.
- KERR, J. K. (1876). Glenaltans, Knock, Belfast. M.D., M.Ch. R.U.I.
- KESER, J. S. (1880). 11, Harley Street, Cavendish Square. M.D. Bâle; F.R.C.S. Eng.
- KEYWORTH, J. W. (1847). Moonta, S. Australia. M.D. Lond.  
1848. *Materia Medica*. Prize;  
1849. *Midwifery*, 3rd Prize;  
Physical Society's Essay, Prize.  
1850. *Ophthalmic Reports*, a Governor's Prize;  
Essay on *Neuralgia*, Mr. Newman Smith's Prize.  
1851. *Comparative Anatomy*. Prize;  
Clinical Medicine, Prize;  
Surgical Reports, Prize;  
Midwifery, Prize;  
Medical Reports, Prize;  
Pathology, Prize;  
Physical Society's Essay, Prize.
- KIDD, H. C. (1881). Bromsgrove Worc. M.B. Lond.; F.R.C.S.  
w 1881-2. 1st Year Student, 3rd Coll. Prize.  
H.S., A.H.S., A.H.P. Clin. Asst. Ear Dept.
- KILHAM, C. S. (1880). 1, Barber Road, Crookesmoor, Sheffield.
- KILNER, W. J. (1869). 218, Ladbroke Grove, N. Kensington. B.A., M.B. Cantab.; M.R.C.P.  
Electrician
- KING, A. (1886). 40, Mill Hill Road, Norwich.  
w 1886-7. 1st Year Student, 1st Coll. Prize.  
s 1887. 1st Year Student, 1st Coll. Prize.  
s 1888. 2nd Year Student, 1st Coll. Prize.  
w 1888-9. 3rd Year Student, 3rd Coll. Prize.  
s 1889. 3rd Year Student, 1st Coll. Prize.  
w 1889-90. 4th Year Student; Treasurer's Gold Medal.  
H.P.
- KING, A. F. W. (1889). Cheriton, Epsom. Ind. Med. Serv.  
Clin. Asst. Throat Dept.
- KING, P. (1884). 29, Gay Street, Bath. B.A., M.D., B.C. Cantab.
- KINGSFORD, B. H. (1888). Ashdene, East Molesey, Surrey. M.B. Lond.
- KINNERSLY, G. E. (1888). French Hospital, Shaftesbury Avenue.
- KIRKPATRICK, J. M.D. Toronto.
- KISCH, A. (1861). Abingdon House, 186, Sutherland Av., Maida Vale.
- KITCHING, J. L. W. (1878). Cobham, Surrey.
- KNAGGS, R. H. E. (1873). Diego Martin, Trinidad, W. Indies.
- KNIGHT, H. (1888). Morholme, Woking.
- KNOCKER, W. D. (1889). Camberwell House, Peckham Road.  
Clin. Asst. Skin and Electr. Depts.
- KNOX, C. A. N. (1888). Sydenburg, Transvaal.
- LABEY, J. (1880). The Homestead, Grouville, Jersey.
- LAKE, R. (1880). 19, Harley Street, Cavendish Square. F.R.C.S.  
w 1881-2. 2nd Year Student, Prosector's Prize.  
Clin. Asst. Ear Dept.
- LAKE, W. W. (1872). Guildford, Surrey. D.P.H.  
Obst. H.P.
- LAMBERT, F. S. (1885). Balgowan, Newland, Lincoln.
- LAMBERT, T. W. (1887). Kamloops, British Columbia, Canada. M.A., M.B., B.C. Cantab.  
H.S., Clin. Asst. Skin Dept.
- LANCASTER, J. (1890). Surg.-Lt.-Col., I.M.S. Madras.
- LANDON, E. (1871). A.M.S.
- LANGTON, C. B. T. (1883). Long Sutton, Lincolnsh.
- LANKESTER, A. C. (1885). Amritsur, India. M.D. Lond.  
w 1885-6. 1st Year Student, 1st Coll. Prize.  
w 1886-7. 2nd Year Student, Half 1st and 2nd Coll. Prizes.  
w 1888-9. 4th Year Student, The Cheselden Medal.  
H.S., A.H.S.
- LANKESTER, F. J. (1882). 13, Belvoir Street, Leicester. D.D.S. Penna.; L.D.S.



- LANKESTER, H. (1846). Rothesay, Victoria Road, Leicester. J.P.  
1850. 1st Year Student, Scholarship;  
Descriptive Anatomy, 1st Prize  
Chemistry, Prize.  
1851. Physiology, Prize;  
Materia Medica, Prize;  
Medicine, Prize;  
1852. 3rd Year Student, Scholarship;  
Medical Cases, President's Prize;  
Medicine, Prize;  
Surgery, Prize;  
Surgery and Surgical Anatomy,  
Cheselden Medal;  
General Proficiency, Treasurer's  
Medal.  
1853. Surgical Essay, President's Prize.  
H.S.
- LANKESTER, H. H. (1880). Church  
Missionary Society, Salisbury Sqre.  
M.D. Lond.  
w 1880-1. Entrance Science Scholarship;  
1st Year Student, 2nd Coll.  
Prize.  
w 1881-2. 2nd Year Student, The College  
Scholarship, Two Years.  
H.P., R.A.
- LASLETT, M. H. (1890). Asst. Med.  
Off. Somerset and Bath Lunatic  
Asylum, Wells, Somerset.
- LATROBE, F. S. (1858).
- LATTER, C. (1888). 10, Earl's Avenue,  
Folkestone. B.A., M.D., B.C.  
Cantab.  
w 1890-1. 4th Year Student, The Mead  
Medal.  
H.P., Obst. H.P.
- LAUHLAN, C. A. (1890). 43, Clapham  
Road.
- LAVER, A. H. (1869). 26, Cemetery  
Road, Sheffield. M.D. Durh.  
1870. 1st Year Student, 3rd Coll. Prize.  
1871. 2nd Year Student, 2nd Coll. Prize.  
w 1872. 3rd Year Student, 2nd Coll. Prize.  
Cheselden Medal.  
H.S., H.P.
- LAVER, H. (1854). Head Street, Col-  
chester. J.P.
- LAVER, J. W. (1889). Head St., Col-  
chester.  
H.P., Clin. Asst. Skin Dept.
- LAVER, P. G. (1886). Head Street,  
Colchester.
- LAW, R. R. (1889). The Maples, Sid-  
cup, Kent. B.A., M.D., B.C. Cantab.  
H.S., A.H.S., Clin. Asst. Skin Dept.
- LAWFORD, J. B. (1879). 99, Harley St.,  
Cavendish Square. M.D. C.M.  
McGill, Montreal; F.R.C.S., Ophth.  
Surg. and Lect. on Ophthalmology  
St. Thos. Hosp. Asst. Surg. Roy.  
Lon. Ophth. Hosp.  
Ophth. Clin. Asst., A.H.P.
- LAWRIE, T. H. (1889). St. Clair,  
Polmont, Stirlingsh.
- LAW, C. U. (1886). 5, South Parade,  
Newcastle-on-Tyne. M.D. Durh.
- LAW, W. G. (1888). 3, East Circus St.,  
Nottingham. M.B., C.M. Edin.;  
F.R.C.S.  
Ophth. H.S.
- LAWSON, R. (1889). Glenluce Villa,  
Westcombe Park, Blackheath.
- LAWTON, H. A. (1868). 98, High St.,  
Poole, Dorset. M.D. Durh.; D.P.H.
- LAXTON, T. L. (1875). c/o C. G. Rice,  
Esq., Pretoria Club, Transvaal.  
w 1876-7. 2nd Year Student, Prosecutor's  
Prize.
- LAYTON, F. G. (1890). St. Stephen's  
Vicarage, Hounslow.  
H.P.
- LEATHAM H. B. (1874). New Ply-  
mouth, New Zealand.
- LEDYARD, W. E. (1870). San Fran-  
cisco, California, U.S.A. M.B.  
Toronto.
- LEES, J. (1859). 21, Brixton Rd. M.D.  
St. And.  
Demonstr. of Morb. Anat., Asst. Res. Med.  
Off., Med. Tutor and Registrar.
- LEESON, J. R. (1871). Clifden House,  
Twickenham, Middlesex. M.D.,  
C.M. Edin.  
Demonstr. of Anat. and H.P.
- LEICESTER, T. (1880). 205, Rye Lane,  
Peckham.
- LESSEY, S. S. (1878). 13, Abinger  
Rd., Deptford.
- LEVICK, H. D. (1887). 9, Cambridge  
Street, Hyde Park. M.B. B.S.  
Lond.; F.R.C.S.  
Jun. Obst. H.P.
- LEWELLIN, A. J. R. (1877). Mel-  
bourne, Victoria, Australia. M.B.,  
B.Ch. Melb.
- LEWERS, T. R. (1880). Berry, New  
South Wales. M.B., B.Ch. Mel-  
bourne.
- LEWIS, C. M. (1881). Steyning, Sussex.
- LEWTAS, J. T. (1885). Surg.-Maj.  
I.M.S. Bengal. Jun. Army and Navy  
Club, St. James's St. M.D., Lond.
- LIGHT, E. M. (1880). 2, Wilton Place,  
Belgrave Square. M.A., M.B., B.C.  
Cantab.  
Clin. Asst. Throat Dept.
- LIGHTFOOT, W. S. (1872). Staff-Surg.  
R.N.
- LINDSAY, H. S. (1885). Muttaborra,  
Queensland.
- LINGARD, A. (1870). Imperial Bacteriologist,  
Muktesar, Kumâon Hills,  
N.W.P., India. M.B., B.S. Durh.;  
D.P.H.  
H.P.

- LITHGOW, J. M. (1880). 41, Humberstone Road, Leicester. M.D., M.Ch. R.U.I.
- LITTELJOHN, S. G. (1864). Res. Med. Off. Central Lond. Distr. Schools, Hanwell. M.B., C.M. Edin.
- LIVESEY, E. W. (1885). Alderney, Channel Islands.
- LLEWELLYN, D. W. H. (1878). Southborough, Tunbridge Wells.
- LOYD, A. (1857). 25, Larkhall Rise, Clapham.
- LOCKYER, C. W. (1886). 7, St. Julian's Farm Road, West Norwood.
- LODGE, P. G. (1893).
- LODGE, S. (1888). 13, Manningham Lane, Bradford, Yorks. M.D., B.S. Durh.
- LOGAN, R. R. W. (1883). Ashby-de-la-Zouch.
- LONGINOTTO, M. J. (1889). Highbeach, Wickham Road, Brockley.
- LONGMAN, A. (1877). Broad Chalk, Salisbury.
- LONGSTAFF, G. B. (1873). Highlands, Putney Heath, and Twicken, Mortheo, N. Devon. M.A., M.D., D.P.H. Oxon; F.R.C.P.; L.C.C.  
w 1873-4. 1st Year Student, 2nd Coll. Prize.  
s 1874. 1st Coll. Prize.  
Physical Society's 1st Year's Prize.  
s 1875. 2nd Year Student, 2nd Coll. Prize.  
w 1875-6. 3rd Year Student, 1st Coll. Prize.  
w 1876-7. 4th Year Student, Mead Medal.
- LONNON, F. (1894). Fern House, 77, Denmark Hill. L.D.S.
- LOTZ, H. J. (1882). Fremantle, West Australia. D.P.H.
- LOW, H. (1885). 10, Evelyn Gardens, South Kensington. M.A., M.B., B.C. Cantab. Anaesthetist St. Thomas's Hospital.  
H.P., R.A., S.O.C., Clin. Asst. Skin Dept.
- LOW, P. C. (1886). Elmstead, Beulah Road, Tunbridge Wells, Kent. B.A., M.B., B.C. Cantab.
- Low, R. B. (1872). Local Govt. Bd., Whitehall and Helmsley House, Christchurch Road, Tulse Hill. M.D., C.M. Edin.; D.P.H. Cantab.
- Low, W. S. (1887). 50, Herne Hill, and 10, Westminster Bridge Road.
- LUARD, H. B. (1885). Surg.-Capt. Bengal Army. B.A., M.B., B.C., D.P.H. Cantab.  
s 1886. 3rd Year Student, 2nd Coll. Prize  
H.P., R.A.
- LUCAS, G. (1863). Uckfield, Sussex.
- LUNN, J. R. (1874). Med. Superint. St. Marylebone Infirm., Notting Hill. F.R.C.S. Edin.  
H.S., R.A., A.H.S., A.H.P.
- LUSH, J. S. (1872). Ivy Cottage, Market Lavington, Devizes, Wilts.  
s 1873. 1st Year Student, 3rd Coll. Prize.
- LUSH, W. H. (1869). Prospect House, Market Lavington, Devizes, Wilts.  
w 1872. 2nd Year Student, Prosecutor's Prize.
- LYNCH, G. W. A. (1882). Ba, Fiji. M.B., B.C. Cantab.
- LYON, T. G. (1878). 8, Finsbury Circus. M.A., M.D. Cantab.; M.R.C.P. H.P., Clin. Asst. Skin and Ear Depts.
- MACAULEY, W. G. R. (1888). 55, Oxford Terrace, Hyde Park.
- MACCORMAC, Sir William. 13, Harley St., Cavendish Square. M.A.R.U.I., M.Ch. (hon. causâ), D.Sc., F.R.C.S.I.; F.R.C.S. Eng. Pres. R.C.S. Eng. Cons. Surg. to St. Thomas's Hospital; Emeritus Lecturer on Clinical Surgery.
- MCCULLAGH, R. C. (1887). Snugville, Shankhill, Belfast, B.A., M.D., M.Ch., R.U.I.
- MCDONNELL, J. O'M. (1879). Surg.-Lt.-Col. Bengal Army. M.D., M.Ch. R.U.I.; F.R.C.S.
- MCDOWELL, D. K. (1886). c/o Messrs. Holt & Co., 17, Whitehall Place.
- MACEVOY, H. J. (1882). 41, Buckley Road, Brondesbury. M.D., B.Sc. Lond.  
w 1884-5. 3rd Year Student, Half 2nd and 3rd Coll. Prizes.  
s 1885. 3rd Year Student, Half 1st and 2nd Coll. Prizes.  
w 1885-6. 4th Year Student, Bronze Mead Medal.  
H.P., R.A., Clin. Asst. Throat Dept.
- MCGEAGH, W. S. (1880). 100, Norroy Road, Putney.
- MACGREGOR, R. D. 3, Sandyford Place, Glasgow.
- MCILROY, J. B. (1887). Annandale, Sydney, New South Wales.
- MAC KELLAR, A. O. 79, Wimpole Street. M.D., M.Ch., R.U.I., F.R.C.S., Surgeon to and Sen. Lect. on Pract. Surg., Lect. on For. Med. at St. Thomas's Hospital.  
Res. Asst. Surg.

- MACKENZIE, H. W. G.** (1882). 59, Welbeck St., Cavendish Square. M.A. Edin.; M.A., M.D. Cantab.; F.R.C.P. Lond.; Assistant Physician to St. Thomas's Hospital and to the Hosp. for Consumption, Brompton; Demonstrator of Morbid Anatomy; Lecturer on Pharmacology and Therapeutics and Joint Teacher of Practical Medicine at St. Thomas's Hospital.  
w 1882-3. 3rd Year Student, 3rd Coll. Prize.  
s 1883. 3rd Year Student, 1st Coll. Prize.  
w 1883-4. 4th Year Student. The Mead Medal.  
Resident Assistant Physician, Medical Registrar, H.P., A.H.P., and Clin. Asst. Skin Department.
- MACKINNON, A. D.** (1887). Uganda, Mombasa, E. Africa. M.D. Aberd.
- MACKRETH, J. F.** Keyingham, Holderness, Hull.
- MCLAUGHLIN, E. H.** (1872). 45, Jeffreys Rd., Clapham Rd.
- MACLEAN, A.** (1869). 10, Mitre Court Chambers, Temple.
- MACLEAN, H. H.** (1878).
- MACNAMARA, J. T.** (1881). 50, Union Road, Rotherhithe.
- MAC RAE, F.** (1888). 25, Half Moon Street, Mayfair. M.B., C.M. Aberd.
- MACTAVISH, J. W.** (1886). Lowdham, Notts.
- MADDEN, T. P.** (1877). Falmouth, Jamaica, M.D., M.Ch.Q.U.I.
- MADDICK, E. D.** (1874). 2, Chandos St., Cavendish Sq., F.R.C.S. Edin.
- MAHON, R. H. D.** (1885). 67, Earl's Court Road.
- MAILE, C. E. D.** (1873). Dedham House, Dedham, Essex.
- MAKINS, G. H.** (1871). 47, Charles Street, Berkeley Square. F.R.C.S. Asst. Surg., Joint Lect. on Anat., St. Thomas's Hospital; Surg. to Evelina Hosp., Exam. for Army, Navy and Indian Medical Services. Dean of Med. School. Surg. Registr., Res. Asst. Surg., H.P., H.S.
- MANLEY, W. G. N.** (1850). C.B., V.C. Surg.-Gen. Army (retired). 3, Lansdowne Terrace, Cheltenham.
- MANNERS, W. F.** (1881). B.A. Cantab.
- MANSEL-HOWE, S. I.** (1871). Athelby, Hillbury Rd., Tooting. M.D. Brux. H.P., R.A.
- MAPLES, R.** (1870). Tower Hill House, Kingsclere, Newbury, Berks. H.S., R.A.
- MARCH, H. C.** (1857). Portesham, Dorchester. M.D. Lond., J.P. 1858. 1st Year Student, Treasurer's 2nd Prize.  
H.S., R.A.
- MARGENOUT, J. G.** (1884). 59, Hayter Road, Brixton.
- MARLOW, F. W.** (1876). 401, Montgomery St., Syracuse, New York. H.S., A.H.P., Oph. Clin. Asst.
- MARRINER, W. H. L.** (1878). Craig Vaen, Poole Rd., West Bournemouth. M.B. Lond.  
Clin. Asst. Ear and Throat Depts.
- MARSACK, A. E.** (1878). Whangarei, Auckland, New Zealand.
- MARSDEN, T.** (1877). Netherleigh, Sevenoaks, Kent. M.D., C.M. Aber.
- MARSH, J. H.** (1872). Heathfield, Sussex.
- MARSHALL, A.** (1886). 145, London Rd. South, Lowestoft. M.D. Brux.
- MARSHALL, J. G.** (1878). B.A., M.B. Cantab.
- MARSTON, F. E.** (1877). High Street, Welshpool, Montgomeryshire. A.H.P.
- MARTIN, C. J.** (1884). Physiological Lab., Univ. of Sydney, N.S. Wales. D.Sc., M.B. Lond.  
w 1884-5. 1st Year Student, 2nd Entrance Scholarship.
- MARTIN, T. H.** (1886). The Gables, Crawley, Sussex.
- MARTINEAU, A. J.** (1891). 14, Lupus Street.  
s 1892. 1st Year Student, 1st Coll. Prize.  
w 1892-3. 2nd Year Student, 1st Coll. Prize.  
w 1893-4. 3rd Year Student, 2nd Coll. Prize.  
w 1894-5. 4th Year Student, Cheselden Medal (bronze) and Treasurer's Gold Medal.
- MASON, A. E.** (1876). 61, Hillfield Road, West Hampstead.
- MASON, F. W.** (1888). 16, Gippeswyk Road, Ipswich.
- MASON, G. A.** (1888). 45, George St., Portman Square. M.A., M.B., B.C. Cantab.
- MASON, R.** (1865). 29, Cavendish St., Ramsgate.
- MASSEY, H. M.** (1877). Gunnedah, New South Wales.
- MASSEY, H. T.** (1875). Knockholt, Deal, Kent.

- MATHIAS, W. L. (1882). 114, Darlington Road, Sydney, N.S. Wales.
- MATTEI, C. (1882). Hillend, New South Wales.
- MATTEI, E. (1879). Accra, Gold Coast, West Africa.
- MATTHEWS, C. E. (1885). Med. Superint. Fountain Hosp., Tooting Grove. B.A., M.D., B.Ch. Oxon., D.P.H.  
Clin. Asst. Throat Dept.
- MATURIN, B. A. (1883). Surg.-Capt. Army.
- MAURICE, O. C. (1856). 75, London Street, Reading.
- MAURICE, W. J. (1880). 11, Friar Street, Reading. M.A., M.B., B.Ch. Oxon.
- MAVOR, W. S. (1869). Waltham Cross, Herts.  
H.P.
- MAYBURY, A. C. (1861). 19, Bloomsbury Square.
- MAYBURY, A. V. (1869). Ashford House, Mile End, Landport. M.D., M.Ch. Q.U.I.  
1870. 1st Year Student, 2nd Coll. Prize.  
1871. 2nd Year Student, 1st Coll. Prize.  
w 1872. 3rd Year Student, 1st Coll. Prize;  
Treasurer's Gold Medal.  
H.S.
- MAYBURY, H. M. (1868). 26, Almeida St., Upper St. M.D., M.Ch. R.U.I.  
1869. 1st Year Student, 2nd Coll. Prize.  
1871. 3rd Year Student, 3rd Coll. Prize.
- MAYBURY, L. (1874). 9, Hampshire Terrace, Southsea. M.D., M.Ch. R.U.I.
- MAYBURY, W. A. (1866). 9, West Stockwell Street, Colchester, Essex. M.D., M.Ch. R.U.I.  
1867. 1st Year Student, 3rd Coll. Prize.
- MAYNARD, E. C. (1877). Leslie Villa, Richmond, Surrey.
- MAYNARD, J. C. M. (1854). Erith, Kent. M.R.C.P. Edin., J.P.
- MEAD, H. T. H. (1856). Christchurch, Hants.
- MEADOWS, B. (1854). 141, Victoria St., Westminster.
- MEADOWS, H. (1866). 33, London Rd., Leicester. M.B., C.M. Edin.  
1867. 1st Year Student, The William Tite Scholarship;  
Phys. Soc. 1st Year's Prize.  
1868. 2nd Year, Tite Scholarship;  
Phys. Soc. 2nd Year's Prize.
- MEASURES, J. W. (1868). 62, Burgoyne Rd., Harringay. (Not practising.)
- MEGGITT, H. (1882). York Lodge, Norwood Road.
- MELSON, W. S. (1890). Queen's Coll., Cambridge. M.A., M.D., B.C. Cantab. Demonstr. of Anat. Univ. Camb.
- MENNEL, Z. (1874). 1, Royal Crescent, Notting Hill.
- MERCES, J. (1880). 68, Drayton Park, Highbury.
- MERRY, W. J. C. (1890). Lincoln College, Oxford. M.A., M.B., B.Ch. Oxon.  
H.P., H.S., Clin. Asst. Skin Dept.
- METCALFE, A. W. (1887). 3, Museum Street, York. M.A., M.B., B.C. Cantab.
- METCALFE, G. (1887). 22, Eldon Square, Newcastle-on-Tyne. M.B., B.S. Durh.
- METCALFE, R. (1856). Leyburn, Yorks. M.D. St. And.
- MICHAEL, H. J. (1874). Surg.-Maj. Army.
- MICKLE, W. J. (1867). Med. Superintendent, Grove Hall Asyl., Bow. M.D. Toronto, F.R.C.P.
- MIDDLETON, R. W. (1881). 17, Hartington Terrace, Beach Road, Southsea. M.B., C.M. Glasg.
- MIFSUD, A. E. (1881). 17, Strada Zaccaria, Valetta, Malta.
- MILLAR, W. H. (1886). St. Helier's, 26, Streatham Hill. M.D. Brux.  
w 1888-9. 3rd Year Student, 2nd Coll. Prize.  
s 1889. 3rd Year Student, 2nd Coll. Prize.  
Clin. Asst. Throat Dept.
- MILLER, F. M. (1864). 284, Amhurst Road, Stoke Newington.
- MILLER, H. L. (1874). Warrnambool, Victoria, Australia.
- MILLER, J. (1877). 136, South Lambeth Road.
- MILLER, J. T. R. (1883). Castlegate House, 78, Castlegate, Malton, and Leavening, Malton, Yorks.
- MILLS, H. W. (1890). Ruardean, Glouc.
- MILLS, R. J. (1873). 35, Surrey St., Norwich. M.B., C.M. Aberd.
- MILLS-ROBERTS, R. H. (1882). Hafodty, Llanberis, N. Wales. F.R.C.S. Edin.



- MILTON, A. R. O. (1888). 11, Brunswick Place, Brighton.  
w 1882. 4th Year Student, The Mead Medal.  
H.P., H.S., A.H.S.
- MILTON, F. R. S. (1884). Gov. Hosp., Port Said, Egypt.  
H.S., A.H.S.
- MILTON, H. M. N. (1876). Kasr el Aini Hospital, Cairo, Egypt.  
H.S., A.H.S., H.P., A.H.P.
- MILTON, W. F. E. (1886). Surgeon P. and O.  
H.S., A.H.S.
- MILWARD, F. V. (1891). The Holloway, Redditch. B.A., M.B., B.C. Cantab.  
Clin. Asst. Skin Dept.
- MISKIN, E. 1888. 175, Kennington Road. M.B. Lond.  
s 1890. 2nd Year Student, 1st Coll. Prize.
- MISKIN, G. A. 1858. 175, Kennington Road. M.D. St. And.
- MISKIN, L. J. 1889. 175, Kennington Road. M.B., B.S. Lond.  
w 1889-90. 1st Year Student, 2nd Coll. Prize.  
w 1890-1. 2nd Year Student, Half 1st and 2nd Coll. Prizes.  
s 1891. 2nd Year Student, 1st Coll. Prize.  
H.S., A.H.S.
- MITCHELL, Rev. J. (1865). The Vicarage, Yealand Conyers, Carnforth, Lanc. M.D. St. And., M.R.C.P. Edin.  
1866. 1st Year Student, 2nd Coll. Prize;  
Phys. Society's 1st Year's Prize.  
1867. 2nd Year Student, 2nd Coll. Prize.  
1868. 3rd Year Student, 2nd Coll. Prize.  
R.A.
- MITCHELL, R. N. (1851). 27, Fitzjohn's Avenue. M.D. St. And.
- MONEY, F. J. (1848). M.D. Lond.  
1849. Descriptive Anatomy, 2nd Prize;  
Chemistry Prize;  
Materia Medica, 1st Prize;  
Matriculation Scholarship, Prize;  
1st Year Student Scholarship.  
1850. Physiology, Prize;  
Comparative Anatomy, Prize;  
Descriptive Anatomy, Prize;  
Medicine, Prize.  
1851. Midwifery Prize;  
Medicine, Prize;  
Physical Society's Essay, Prize;  
Surgery, Prize;  
Surgery and Surgical Anatomy, Cheselden Medal;  
General Proficiency, Treasurer's Gold Medal.
- MONTAGUE, A. J. H. (1881). 35, Potter St., Worksop. M.D. Durh.  
H.P., Clin. Asst. Skin Dept.
- MONTGOMERY, W. A. (1888).
- MOODY, J. M. (1871). Med. Superint. Lond. Co. Asyl., Cane Hill, Purley, Surrey.
- MOORE, D. (1858). Woodthorpe, Sydenham Hill Rd. (not practising). M.D. St. And.
- MOORE, H. M. (1888). Surg.-Lt., I.M.S. Bombay.  
Clin. Asst. Ear Dept.
- MOORE, P. L. (1891). Avonside, Tewkesbury.
- MOORES, S. G. (1882). Surg.-Capt. Army.
- MORETON, J. E. (1849). Tarvin, Chester. F.R.C.S.  
1850. 1st Year Student, Scholarship;  
1852. Physiology, Prize;  
Descriptive Anatomy, Prize;  
Physical Society's Essay, Prize;  
Medicine, Prize;  
Surgery, Prize;  
2nd Year Student, Scholarship.  
1853. 3rd Year Student, Scholarship;  
Physiology, Prize;  
Clinical Medicine, Pres. Prize;  
Clinical Medicine, Treas. Prize;  
Clinical Medicine, Mr. N. Smith's Prize;  
Ophthalmic Surgery, Prize;  
Medicine, Prize;  
Surgery and Surgical Anatomy, Cheselden Medal;  
Gen. Proficiency, Treas. Medal.  
1854. Clinical Med., Dr. Root's Prize.  
H.S.
- MORETON, R. (1890).
- MORETON, T. (1856). Northwich, and Spring Mount, Hartford, Chesh.  
1857. 1st Year Student, Treasurer's 2nd Prize;  
Matriculation Examination, Classics and Mathematics, Prize.  
1858. Clinical Medicine, Prize.
- MORETON, T. W. E. (1885). Tarvin, Chester. B.A. Cantab.
- MORGAN, C. A. (1883). Greenhill, Thorncombe, Chard.
- MORGAN, L. W. (1861). The Hafod, Pont-y-pridd, Glamorg. M.D., C.M. Aberd., J.P.
- MORGAN, LL. A. (1878). 118, Bedford Street, Liverpool. M.D. Durh.
- MORGAN, S. (1851). 15, Oakfield Rd., Clifton, Bristol. M.D. St. And.  
1854. Forensic Medicine, 2nd Prize.
- MORGAN, W. (1872). 3, Adelaide St., Swansea.  
R.A.
- MORRIS, C. K. (1873). Gordon Lodge, Charlton Road, Blackheath.  
w 1875. Prosecutor's Prize.
- MORRIS, E. H. G. (1888). 8, Gloucester Terr., Onslow Gdns., S. Kensington. B.A., M.B., B.C. Cantab.  
Anæsthetist St. Thomas's Hospital.  
Tel. : "Emphatic, London."

- MORRIS, E. W. (1882). Kembla House, Port Adelaide, S. Australia.
- MORRIS, J. E. (1867). Windhill, Bishop's Stortford, Herts. M.D. Durh.
- MORRIS, S. G. Nantgaredig, Carmarthen. M.B., C.M. Edin.
- MORTON, J. (1860). Eastgate House, Guildford. M.B. Lond. H.S., R.A.
- MOULLIN, J. A. M. (1871). 69, Wimpole St., Cavendish Square. M.A., M.B. Oxon.; M.R.C.P. H.P.
- MOXON, C. C. (1885). Market Place, Pontefract.
- MUSSON, A. W. (1887). 15, King St., Clitheroe, Lanc. B.A., M.B., B.C. Cantab.
- MUSSON, W. E. (1849). Clitheroe, Lanc. 1850. Matriculation Scholarship, Prize.
- NAIRN, R. (1881). Hastings, Napier, New Zealand. F.R.C.S. Ophth. Asst., H.P.
- NASH, E. H. T. (1890). 36, The Avenue, Bedford Park. 1896. Solly Medal and Prize. H.P.
- NAUTH, B. (1890). Surg.-Lt. I.M.S. Madras.
- NEATE, C. P. W. (1855). Stilton, 9, London Road, Forest Hill. F.R.C.P., F.R.C.S. Edin.
- NETTLESHIP, E. 5, Wimpole Street, Cavendish Square. F.R.C.S. Cons. Oph. Surg. St. Thomas's Hospital; Surg. Roy. Lond. Ophth. Hosp. Ophth. Surg., Dean of Med. Sch.
- NEWBOULD, N. J. (1878). Abbots Bromley, Staff.
- NEWBY, C. H. (1866). 20, Landport Terr., Southsea, Hants. F.R.C.S. 1870. Prosecutor's Prize. Surg. Regist., H.S., H.P., R.A., Asst. Demonstr. of Anat.
- NEWCORNE, C. F. (1882). Victoria, British Columbia. M.D., C.M. Aber.
- NEWINGTON, A. S. L. (1872). Woodlands, Ticehurst, Sussex. M.B. Cantab. H.P.
- NEWINGTON, T. (1874). Ridgeway, Ticehurst, Sussex. B.A. Cantab.
- NEWSHOLME, A. (1875). Town Hall, and 11, Gloucester Place, Brighton, M.D. Lond.; M.R.C.P. w 1875-6. 1st Year Student, 1st Coll. Prize. w 1876-7. 2nd Year Student, 1st Coll. Scholarship. s 1877. Ditto 1st Coll. Prize. w 1877-8. 3rd Year Student, The "College Scholarship," 1st Coll. Prize. H.P., A.H.P., A.H.S., R.A.
- NEWTN, A. H. (1864). Hayward's Heath, Sussex. M.D. Aberd. Mem. Gen. Counc. Univ. Aberd.
- NICHOL, F. E. (1882). 11, Ethelbert Terr., Margate. M.A., M.B., B.C. Cantab. H.S., A.H.S., Clin. Asst. Skin Dept.
- NICHOLSON, F. (1872). 29, Albion St., Hull. M.D. Lond. Phys. Hull Roy. Infirmary. w 1873. 1st Year Student, 1st Coll. Prize. s 1873. Ditto 1st Coll. Prize. w 1874. 2nd Year Student, 1st Coll. Prize. s 1874. Ditto 1st Coll. Prize. w 1875. 3rd Year Student, 1st Coll. Prize; Cheselden Medal; Mead Medal; Treasurer's Gold Medal. R.A., H.P., H.S.
- NICHOLSON, T. G. (1889). M.B., B.Sc. Lond. w 1889-90. 1st Year Student, 1st Entrance Science Scholarship. H.P., Clin. Asst. Skin Dept.
- NIVEN, J. (1878). Health Office, Town Hall, Manchester. M.A. Aberd.; M.A., M.B., B.C. Cantab.
- NIX, H. W. (1888). Gov. Res. Med. Off. Marble Bar, Pilbarra Gold Field, W. Australia. B.A., M.B., B.C. Cantab. H.S., A.H.S.
- NIX, R. E. (1891). 14, Warkworth Street, Cambridge. B.A., M.B., B.C. Cantab. H.P.
- NORRIS, E. S. (1875). 117, High St., Eton, Bucks. M.A., M.B. Cantab. Med. Regist. and Asst. Demonstr. of Morb. Anat.
- NORTHCOTE, P. (1887). 27, New Queen Street, Scarborough. H.P.
- NORTON, J. J. (1887). Bagnalstown, Co. Carlow.
- NOWELL, A. H. (1856). Clarendon House, Mortlake.
- OBORN, H. W. (1885). 1, Hyde Vale Villas, Hyde Vale, Greenwich.
- ODDIE, S. I. (1891). New Malden, Surrey. M.B., C.M. Edin.
- ODLING, A. E. (1876). Alford, Linc.

- OKELL, J. B. (1880). 2, Magdala Rd., Nottingham.
- OLDING, A. E. (1881). 13, Abinger Road, Deptford.
- OLIVEY, W. J. (1881). Daydawn, Murchison, West Australia.
- ORANGE, W. C.B. (1853). 12, Lesham Grdns., Kensington. M.D. Heidelb., F.R.C.P. Lond.
- ORD, G. R. (1855). Streatham Hill.
- ORD, G. W. (1881). Mildenhall, Suffolk.
- ORD, K. W. 1888. 4, Cambridge Terrace, Dover. M.A., M.B., B.C. Cantab. A.H.S.
- ORD, W. M. (1852). 37, Upper Brook Street. M.D. Lond., F.R.C.P. Physician to St. Thomas's Hospital.
1853. Matriculation Exam. Scholarship; 1st Year Student, Scholarship; Descriptive Anatomy, Prize; Chemistry, Prize.
1854. 2nd Year Student, Scholarship; Medicine, Prize; Materia Medica, Prize; Physiology, Prize.
1855. 3rd Year Student, Scholarship; Surgery and Surgical Anatomy, Cheselden Medal; Forensic Medicine, Prize; Pathology, Prize; Practical Chemistry, Prize; Physiology, Prize; General Proficiency, Treasurer's Medal.
1856. Registrar, Prize.
- Joint Lecturer on Medicine, Lecturer on Comparative Anatomy, Physiology, and Practical Physiology, Demonstrator of Anat., Surg. Registr. and H.S.
- ORI, W. W. 1883. The Hall, Salisbury. M.A., M.D., B.Ch. Oxon., M.R.C.P. s 1884. 1st Year Student, 2nd Coll. Prize. w 1884-5. 2nd Year Student, Half 2nd Coll. Prize.
- w 1886-7. 4th Year Student, Mead Medal. H.P., H.S., A.H.S.
- ORFORD, J. (1877). Starfield House, Pontefract, Yorks. H.S., H.P., R.A.
- ORISATHE OJASA 1885. of Ikija (Prince), Lagos, W. Africa.
- ORONHYATEKHA, A. 1894. 24, Charing Cross. M.D. Toronto.
- OSBORN, S. (1867). 10, Maddox Street, Regent Street. F.R.C.S., J.P. Surgeon to the Hospital for Women, Soho Square.
1870. Physical Society, 2nd Year's Prize. Surgical Registrar, H.S., H.P., R.A.
- OSBORNE, F. (1882). 23, Baker St., Portman Square.
- OSBURN, H. B. (1884). Bureshot, Surrey. D.P.H. R.A., S.O.C.
- OWEN, C. W. (1869). C.I.E., C.M.G. Surg.-Maj. Bengal Army.
- PALIN, E. W. (1891). Linton Vicarage, Ross. M.A., M.B., B.Ch. Oxon. H.P., Clin. Asst. Ear Dept.
- PALIN, H. V. Wrexham. M.B., C.M. Edin., J.P. Mayor of Wrexham, 1889-90-1.
- PALMER, A. M. (1867). Whittington, Chesterfield.
- PALMER, H. G. (1879). 83, Milkwood Road, Herne Hill.
- PALMER, H. J. (1874). Heath, nr. Chesterfield, Derbysh.
- PAPILLON, J. W. (1876). Brent Knoll, Bridgwater, Somers.
- PAPILLON, T. A. (1876). 77, London Rd., St. Leonard's-on-Sea. F.R.C.S. Edin.
- PANTOTY, J. E. (1878). 1, Larkin's Lane, Calcutta, India.
- PARK, J. R. S. (1879). 183, King Street, Dukinfield, Cheshire.
- PARKER, G. R. W. (1885). 19, Derby Lane, Stoneycroft, Liverpool. M.A. Cantab.
- PARKER, G. W. (1860). 17, Tisbury Road, West Brighton.
- PARKER, R. W. (1860). 13, Welbeck Street, Cavendish Square.
- PARKER, W. T. (1873). 68, Lillie Road, Fulham.
- PARROTT, J. (1869). Stanhoe House, Grove Vale, East Dulwich.
- PARSEY, E. W. (1886). Glenavon, King's Norton, Worc. M.A., M.B., B.C. Cantab.
- PARSON, F. J. (1865). New Somerset Hosp., Cape Town, South Africa.
- PARSON, H. (1869). Oxford Villa, Bracknell, Berks. (retired).
- PARSONS, C. O. (1882). 202, Castle Road, Roath, Cardiff.
- PARSONS, F. G. (1881). 17, Michel-dever Road, Lee. F.R.C.S., Lect. on Comp. Anat. and Elem. Biol., Demonstrator of Anat. at St. Thomas's Hospital.
- w 1882-3. 2nd Year, Prosector's Prize.
- w 1886-7. 6th Year, Grainger Testimonial Prize.

- PARSONS, W. D. (1836). 32, Huskisson Street, Liverpool.
- PARTRIDGE, W. T. (1877.) 97, Albany Road, Old Kent Road.
- PATCH, H. H. L. (1885). The Fernery, Chudleigh, S. Devon.
- PATERSON, W. H. J. (1889). St. Thomas's Hospital.  
w 1891-2. 1st Year Student, 2nd Coll. Prize.  
H.P., Clin. Asst. Ear Dept.
- PAUL, E. W. (1871). Hope House, West Cowes, I. W.
- PAULING, W. T. (1886). New Somerset Hosp., Cape Town.
- PAYNE, J. F. 78, Wimpole Street, Cavendish Square. B.A., M.D. Oxon.; B.Sc., F.R.C.P. Lond.; Phys. and Jt. Lect. on Med. (late Lect. on Path. and Morb. Anat.) St. Thos. Hosp.  
Radcliffe Travelling Fellow, Oxford.
- PEARCE, G. H. (1886). The Hut, Grove Gardens, Hanover Gate.
- PEARSE, A. W. (1882). Botesdale, Suffolk.
- PEARSON, H. L. (1883). Bay House, Holt Hill, Tranmere, Birkenhead, and Devon House, Bedford Rd., Rock Ferry, Ches.
- PEATLING, A. V. (1889). The Old Market, Wisbech, Cambs. B.A., M.B., B.C. Cantab.
- PEDLEY, R. D. (1877). 17, Railway Approach, London Bridge. F.R.C.S. Edin.; L.D.S.  
Demonstr. of Dent. Surg.
- PENHALL, J. T. (1852). Broadwas-on-Teme, Worc. (retired). M.D. St. And., F.R.C.S.
- PENTREATH, L. N. (1890). Stone Cottage, Bognor, Sussex. M.A. Oxon.
- PERKINS, A. L. (1875). Sketty, Swansea.
- PERKINS, J. J. (1888). City of London Hospital for Diseases of the Chest, Victoria Park. M.A., M.B., B.C. Cantab.  
w 1888-9. 3rd Year Student, 1st Coll. Prize. H.P.
- PERKINS, J. S. (1825). 9, Palace Gate, Exeter. F.R.C.S.
- PERN, A. (1864). Botley, Southampton. F.R.C.S., D.P.H.
- PERN, E. C. (1888). Botley, Southampton.
- PERRY, E. L. (1890). 3, St. George's Square, Finsbury. I.M.S.  
w 1891-2. 2nd Year Student, 2nd Coll. Prize.  
w 1892-3. 3rd Year Student, 2nd Coll. Prize.
- PERSHOUSE, F. (1886). Asst. Med. Off. S.-West. Fev. Hosp., Stockwell.  
H.P., Clin. Asst. Skin Dept.
- PETMAN, A. P. (1853). Wootton-Basset, Wilts.
- PETTIGREW, A. J. W. (1871). Camperdown, Victoria.
- PHELPS, A. M. (1873). 37, Compton Terrace, Highbury. M.A., M.D. Cantab.
- PHELPS, W. H. G. (1852). Weston-super-Mare. M.D. Aberd.
- PHILLIPS, A.O.H. (1871). Warwick, Queensland.
- PHILLIPS, A. S. (1883). 17, Kimbolton Rd., Bedford.
- PHILLIPS, E. J. M. (1874). 33, Rodney Street, Liverpool. L.D.S., Hon. Dent. Surg. Liverp. Roy. Infirm., Lect. on Dent. Surg. Univ. Coll. Liverp.
- PHILLIPS, E. V. (1881). Kibworth, Leicester. D.P.H.
- PHILLIPS, G. G. (1858). Tickhill, Rotherham, Yorks.  
1860. 3rd Year Student, 3rd Coll. Prize. H.S.
- PHILLIPS, G. C. J. (1890). Queen's College, Cambridge. M.A., M.D., B.C. Cantab.
- PHILLIPS, J. D. (1856). Hoxne, Scole, Suffolk.
- PHILLIPS, J. R. P. (1885).
- PHILLIPS, P. C. (1886). Maybush House, Felixstowe.  
Clin. Asst. Skin Dept.
- PHILLIPS, S. C. (1882). South View, 115, Longley Rd., Tooting Junction.
- PICKFORD, J. K. (1871). 2, Alexandra Rd., Cleethorpes, Grt. Grimsby, Linc.  
w 1872. 1st Year Student, 3rd Coll. Prize.
- PIETERSEN, J. F. G. (1879). Ashwood House, Kingswinford, Staff.  
w 1883-4. Solly Medal and Prize.  
Clin. Asst. Throat Dept.
- PIGGOTT, F. C. H. (1882). 13, Orchard Gdns., Teignmouth, S. Devon. B.A., M.D., B.C. Cantab.
- PIKE, J. B. (1870). 15, High Street, Loughborough.
- PINTO, J. O. 1886. Surg.-Capt. I.M.S. Madras.



- PITTS, B. (1873). 109, Harley St., Cavendish Square. M.A., M.B., M.C. Cantab., F.R.C.S., Surgeon and Lect. on Surg. St. Thos. Hosp.; Surg. Hosp. for Children, Gt. Ormond St.  
Res. Asst. Surg. Demonstr. of Anat., H.S., R.A.
- PLANCK, C. (1888). County Asylum, Haywards Heath. M.A. Cantab.  
w 1887-9. 1st Year Student, 2nd Coll. Prize.  
w 1889-90. 2nd Year Student, The Peacock Scholarship.  
s 1890. 2nd Year Student, 2nd Coll. Prize.  
w 1890-1. 3rd Year Student, 2nd tenure of Peacock Scholarship, with 3rd Coll. Prize.  
H.S., A.H.S., Clin. Asst. Ear Dept., Asst. Demonstr. of Pract. Surg.
- PLANT, C. (1882). Dalton-in-Furness, Lanc.
- FLOWMAN, S. (1879). Victoria F.R.C.S.
- FLOWMAN, T. A. B. (1881). Eagle House, Clapham Common.
- POCOCK, A. G. C. (1877). Manor View, High Road, Streatham.
- POCOCK, W. (1870). Chicago, U.S.A.
- PODMORE, R. (1870). 7, Linden Gardens, Chiswick.
- POLLARD, F. (1864). 11, St. James's Road, Upper Tooting. M.D. Lond.  
1865. 1st Year Student, 2nd Coll. Prize.  
1866. 2nd Year Student, 2nd Coll. Prize; Physical Society's 2nd Year's Prize.  
1868. 3rd Year Student, 1st Coll. Prize; Physical Society's 3rd Year's Prize; Cheselden Medal.  
Med. Regist., H.S., R.A.
- POMEROY, W. (1889). Queen Camel, Bath.
- POPE, E. (1833). Tring, Herts. (retired).
- PORTER, G. (1886). York House, Seaton, Devon. M.D., C.M. Edin.
- POTTER, H. P. (1871). Med. Superint. Kensington Infirm. M.D. Durh., F.R.C.S., D.P.H.  
s 1872. 3rd Coll. Prize.  
w 1873. 2nd Year Student, 2nd Coll. Prize; Prosector's Prize.  
w 1874. 3rd Year Student, 1st Coll. Prize; Cheselden Medal.  
1875. Grainger Testimonial Prize.  
Surgical Registrar, H.S., H.P., R.A.
- POTTER, J. H. (1881). Cullompton, Devon.
- POWELL, J. J. (1887). Highworth, Wilts. M.A., M.B., B.C. Cantab.
- POWELL, J. J. (1874). Norwood Lodge, Weybridge, and Byfleet, Surrey.
- POWER, C. J. (1879). Hazelwood, Nailsworth, Glouc. M.A. Cantab., M.D. Dub.
- POYNDER, G. F. (1871). Surg.-Maj. Army.
- PRAIN, J. L. 1888. St. Thomas's Hospital.  
H.S., A.H.S., Clin. Asst. Throat Dept.
- PRALL, C. B. (1887). Surg.-Lt. Bengal Army.
- PRANGLEY, H. J. (1875). Tudor House, 197, Anerley Road.
- PRICE, A. (1869). 2, Handsworth New Road, Birmingham.
- PRICE, A. E. (1884). 9, Clifton Cresc., Folkestone. M.B. Lond.  
Clin. Asst. Ear and Skin Depts.
- PRICE, W. T. (1876).
- PRIESTLEY, C. E. (1870). 1, Dorset Gardens, Brighton.
- PRING, H. R. (1888). 166, Kensington Pk. Road, Notting Hill.
- PRINGLE, A. Y. (1884). 36, Cambridge Gdns. Notting Hill.  
Clin. Asst. Throat Dept.
- PRIOR, J. (1890). House Surg. Dewsbury and Distr. Gen. Infirm.
- PROCTOR, S. F. (1874). Trinidad, W. Indies.
- PRONGER, C. E. (1872). East Parade, Harrogate, Yorks.
- PUGH, J. H. (1871). Chestnut Lawn, Stechford, nr. Birmingham. B.A. Cantab.
- PURKISS, A. (1875). Rosedale, Wols-ton, nr. Coventry. M.D., C.M. Aberd.
- PURVIS, G. C. (1882). 3, Buccleuch Place, Edinburgh. M.D., C.M. Edin., B.Sc.
- PURVIS, J. P. (1860). 38, Royal H Greenwich.
- PURVIS, P. (1833). 5, Lansdown Place, Blackheath. M.D. Lond.
- PURVIS, W. P. (1887). House Surg., Royal South Hants. Infirmary, Southampton. M.D., B.Sc. Lond.; F.R.C.S.  
H.S., H.P., A.H.S., Clin. Asst. Throat Dept.
- QUAIT, A. W. (1887). Dartford Heath.
- QUILLER, C. T. (1882). St. Paul's Close, Rectory Grove, Clapham.

- RABY, J. (1862).** 12, The Crescent, Bedford.  
R.A.
- RADCLIFFE, H. H.** Ballarat, Victoria, Australia.
- RANSON, W. (1888).** Co. Infirmary, Downpatrick, co. Down.
- RAYNER, H. (1861).** 2, Harley St., Cavendish Square, and Upper Terrace House, Hampstead. M.D., C.M. Aberd.; M.R.C.P., Lecturer on Psychology at St. Thomas's Hospital.  
1862. 1st Year Student, 1st Coll. Prize.  
1863. 2nd Year Student, 1st Coll. Prize.  
Lecturer on Psychology at Middlesex Hospital, and Medical Superintendent Hanwell Asylum.
- REDDY, H. L. (1876).** 999, Dorchester Street, Montreal, Canada.
- REDPATH, W. (1888).** Ferndale Court Road, West Norwood.  
H.S., A.H.S., Asst. Teacher Pract. Surg.
- REED, W. H. (1861).** Allersleigh, Westbury, Wilts.
- REID, R. G. (1890).** 176, Lambeth Road. M.B., C.M. Glasg.
- REID, R. W.** 8, Queen's Gardens, Aberdeen. M.D., C.M. Aberd.; F.R.C.S., Prof. of Anat. Univ. Aberd.  
Joint Lect. on and Sen. Demonstr. of Anat., Joint Demonstr. of Morb. Anat.
- REILLY, C. C. (1880).** Surg.-Capt. Army.
- RELTON, B. (1879).** 50, Church St., Rugby.  
1880. 2nd Entrance Science Scholarship.  
H.S., A.H.S., Asst. Demonstr. of Pract. Surg.
- RENDLE, G.** 113, Sunderland Road, Forest Hill. Sec. Med. Sch.
- RENNY, E. G. (1886).** Priory House, Wellesley Road, Colchester.
- REVELY, J. S. (1885).** 25, Greek St., Stockport. M.D. Durh.
- REW, J. (1857).** 31, Western Road, Bexhill-on-Sea, Sussex.
- RICHARDS, L. W. (1891).** St. Thomas's Hospital. M.B., B.S. Durh.  
Clin. Asst. Throat Dept.
- RICHARDSON, C. B. (1875).** 2, Tisbury Road, West Brighton. M.D., C.M. Aberd.  
A.H.P., A.H.S.
- RICHARDSON, J. C. R. (1887).** Benenden, Cranbrook, Kent. M.A., M.B., B.C. Cantab.
- RICHARDSON, S. W. F. 1880.** St. Thomas's Hospital. M.B., B.S., B.Sc. Lond.; F.R.C.S.; Demonstrator of Physiology.  
w 1880-90. 1st Year Student, The William Tite Scholarship.  
s 1890. 1st Year Student, 2nd Coll. Prize.  
w 1891-2. 1st Year Student, The Musgrove Scholarship.  
s 1892. 3rd Year Student, 1st Coll. Prize.  
w 1892-3. 4th Year Student, The Choselden Medal;  
The Treasurer's Gold Medal.  
H.S., A.H.S., Obst. H.P.
- RIDGE, J. J. (1863).** Carlton House, Enfield, Middlesex. M.D., M.D. (State Med.), B.S., B.A., B.Sc. Lond.  
1864. 1st Year Student, The William Tite Scholarship.  
1865. 2nd Year of Tite Scholarship;  
Physical Society's 2nd Year's Prize;  
Prosector's Prize.  
1866. The Grainger Testimonial Prize.  
1868. 3rd Year Tite Scholarship;  
Treasurer's Gold Medal.  
H.S.
- RIDSDALE, A. E. (1888).** Rottingdean, Sussex.
- RIGBY, C. S. A. (1878).** 15, Winckley Sq., and 9, Bushell Pl., Preston, Lanc.
- RIGBY, P. A. 1873.** Bhagalpur, Bengal, India.
- RITCHIE, E. D. (1883).** Blackwater House, Blackwater, Hants. M.A. M.B., B.C. Cantab.  
H.S., A.H.S., H.P., A.H.P.
- ROALFE-COX, W. J. (1881).** The Laurels, Mortimer, Reading, Berks.
- ROBATHAN, G. B. (1866).** The Grove, Risca, Newport, Mon.
- ROBERTS, E. A. (1884).** 24, Holbein Place, Sloane Square. M.D. Lond.
- ROBERTS, O. (1874).** Nettlebed, Henley-on-Thames.
- ROBERTSON, C. (1883).** Thistle Villa, Sea Point, Cape Town, S. Africa.
- ROBINSON, G. W. (1873).** Surg.-Maj. Army.
- ROBINSON, H. B. (1879).** 1, Upper Wimpole Street. M.D., M.S. Lond., F.R.C.S. Assistant Surgeon to and Dem. of Anatomy at St. Thomas's Hospital. Assistant Surgeon to the East London Hospital for Children. Shadwell.  
s 1881. 2nd Year Student, 1st Coll. Prize.  
Resident Assistant Surgeon, H.P., H.S., A.H.S.
- ROBINSON, M. A. (1869).**

- ROBINSON, S. C. B. (1874). Surg.-Maj. Army.
- ROBINSON, S. R. (1836). 68, Fenwick St., Geelong, Victoria, Australia.
- ROBINSON, W. H. (1882). 14, Upper Queen's Terrace, Fleetwood, Lanc.
- ROBSON, C. (1882).
- ROBSON, K. B. 1887. 18, Bondgate Without, Alnwick, Northld. M.B. Durh.
- ROBSON, W. W. C. (1878). Walker-ingham, Gainsboro', Linc.
- ROCK, C. H. (1887). Surg. R.N. 65, Granville Park, Lewisham.
- ROCKHILL, W. C. (1871). 17, Charlotte Street, Hull. M.A., M.B. Cantab.; M.D. Dub.
- ROE, A. D. (1880). 47, West Hill, Wandsworth. B.A., M.B. Cantab. w 1880-1. 3rd Year Student, 2nd Coll. Prize.
- ROE, E. A. H. (1889). Surg.-Lt.-Col. Army (retired).
- ROMER, H. (1884). 68, Killieser Avenue, Streatham Hill. M.A., M.B., B.Ch. Oxon.
- RONALD, A. E. (1886). Melbourne, Victoria, Australia. M.B., B.C. Cantab.
- RORIE, J. (1846). Dep. - Insp. - Gen. R.N. (retired).
- ROSSER, W. (1865). Glenalmond, Wellesley Road, Croydon, Surrey. M.D. Aberd. H.S.
- ROSSITER, G. F. (1870). Cairo Lodge, Weston-super-Mare. M.B. Lond. s 1870. 1st Year Student, 1st Coll. Prize. w 1870. 2nd Year Student, 1st Coll. Prize. s 1872. 1st Coll. Prize. w 1873. 3rd Year Student, 3rd Coll. Prize; Cheselden Medal; Treasurer's Gold Medal. H.P., H.S., R.A.
- ROSTANT, A. A. (1887). 95, Ripple Road, Barking.
- ROTHERHAM, A. (1892). B.A., M.B., B.C. Cantab.
- ROULLARD, L. A. J. 1886. Durhan, Natal. M.B. Camb.; F.R.C.S. H.S., A.H.S.
- ROUND, J. C. (1884). Purbrook, 19, Crescent Wood Road, Sydenham Hill.
- ROUSE, R. E. (1878). 42, Hove Park Villas, West Brighton (summer); and Villa Copello, Boulevard Peirra, Monte Carlo (winter). M.D. Lond. s 1880. 2nd Year Student, 3rd Coll. Prize. R.A.
- ROWZ, W. J. V. (1875). Johannesburg, Transvaal.
- RUDALL, J. F. 1890. 121, Collins Street East, Melbourne. M.B., B.S. Melb. Ophth. H.S.
- RUDALL, J. T. 1851. 121, Collins Street East, Melbourne, Victoria, Australia. F.R.C.S.
- RUGG, J. F. (1873). 25, High St., Hastings.
- RUSSELL, A. E. (1889). Walton House, 43, Manor Park, Lond. M.B., B.S. Lond.; Demonstrator of Physiology. w 1889-90. 1st Year Student, 2nd Entrance Science Scholarship; 1st Coll. Prize. s 1890. 1st Year Student, 1st Coll. Prize. w 1890-1. 2nd Year Student, Half 1st and 2nd Coll. Prizes. w 1891-2. 3rd Year Student, 1st Coll. Prize. H.P., H.S., A.H.S., Clin. Asst. Skin Dept.
- RUSSELL, J. (1890). Cross Bank, Batley, Yorks. M.A. Aberd., M.D., C.M. Edin.
- RUSSELL, J. S. R. (1886). 4, Queen Anne St., Cavendish Square. M.D. C.M. Edin.; M.R.C.P. Lond.
- RUTHERFOORD, H. T. (1886). Salisbury House, Taunton. M.A., M.D. Cantab.; M.R.C.P.
- RYGATE, R. (1877). Wardington, Banbury, Oxon.
- SALISBURY, C. R. (1887). Stanningley, Leeds.
- SAMS, J. S. (1854). Eltham Road, Lee.
- SANDWICH, F. M. (1872). Cairo, Egypt, and Savile Club, London. M.D. Durh.; M.R.C.P. Lond.; Phys. and Teacher of Clin. Med. Kasr el Aini Hosp., Cairo; Exam. in Med. and Path. at Med. Sch. H.P., R.A.
- SANEYOSHI, Y. (1879). Tokio, Japan. F.R.C.S. w 1881-2. 3rd Year Student, 1st Coll. Prize. H.P., A.H.P., A.H.S.
- SANKEY, E. H. O. (1891). Boreatton Park, Baschurch, Salop. M.A., M.B., B.C. Cantab.
- SANSOM, H. A. (1882). The Glen, 127, West End Lane, West Hampstead. M.D. Lond. A.H.P., Clin. Asst. Throat and Skin Dept.
- SAPARA, O. 1887. Lagos, West Africa.

- SARKIES, S. C. (1877). Surg.-Maj. Madras Army.
- SAUNDERS, C. E. (1861). Med. Superint. Sussex Co. Asyl., Hayward's Heath. M.D., C.M. Aberd.; M.R.C.P., D.P.H. Surg. Regist., R.A.
- SAUNDERS, E. A. (1889). 5, Alderbrook Rd., Nightingale Lane, Balham. M.A., M.B., B.Ch. Oxon. w 1892-3. 4th Year Student, The Mead Medal. H.P. Obst. H.P. Ophth. H.S.
- SAUNDERS, Sir Edwin. (1836). Fairlawm, Wimbledon Common (retired). F.R.C.S., Surg.-Dent. to H.M. the Queen and T.R.H. the Prince and Princess of Wales, also to his late R.H. Prince Consort. Lect. on Anat. and Dis. of the Teeth,
- SAUNDERS, H. (1882). The Priory, Deddington, Oxon. B.A. Cantab.
- SAUNDERS, H. (1871). Surg.-Maj. Army.
- SAUNDERS, H. W. (1866). Cape Town, M.B. Lond., F.R.C.S. 1867. 1st Year Student, 2nd Coll. Prize. 1868. Prosector's Prize. 1869. 3rd Year Student, 1st. Coll. Prize; Treasurer's Gold Medal; Physical Society's 3rd Year's Prize.
- SAUNDERS, W. S. (1843). 13, Queen Street, Cheapside, and 58, Onslow Gdns., South Kensington. M.D. Castleton U.S. 1845. Medicine, Prize; Midwifery, Prize; Clinical Medicine, Prize.
- SAVILL, T. D. (1875). 60, Upper Berkeley St., Portman Sq. M.D. Lond., D.P.H. Cantab. w 1875-6. 2nd Entrance Science Scholarship; 1st Year Student, The William Tite Scholarship. s 1876. 3rd Coll. Prize. s 1877. 2nd Year Student, 2nd Coll. Prize. H.P., A.H.P., R.A.
- SAYRES, A. W. F. (1885). Ash House, Wincanton, Bath, Somerset. Clin. Asst. Ear. Dept.
- SAYERS, M. J. H. (1889). Res. House Surg. Royal Orthopædic Hospital, 297, Oxford Street.
- SCHILLING, G. (1885). 58, Crystal Palace Park Road, Sydenham.
- SCOTT, E. (1870). Perth, W. Australia. M.D. Durh.
- SCOTT, J. R. (1885). Market Overton, Oakham, Rutland.
- SCOTT, J. W. (1875). 19, Bilston St., Wolverhampton.
- SCUDAMORE, L. (1886). 23, Granville Park, Blackheath. Clin. Asst. Skin. Dept.
- SCUTT, T. H. (1879). Colne Lodge, Staines, Middlesex. w 1882-3. 3rd Year Student, 1st Coll. Prize. A.H.P.
- SEATON, E. (1865). The Limes, 56, North Side, Clapham Common. M.D., F.R.C.P. Lect. on Pub. Health St. Thos. Hosp.; Exam. in Pub. Health and State Med. R.C.S. Eng. and Univ. Lond.
- SECOOMBE, P. J. A. (1890). 45, Madeley Rd., Ealing. M.A., M.B., B.C. Cantab. H.P., Clin. Asst. Electr. Dept.
- SEDDON, H. B. (1883). 40, Chepstow Rd., Newport, Mon. A.H.P., Clin. Asst. Throat and Ear Dept.
- SEDGWICK, H. R. (1892). Boroughbridge, Yorks. M.A., M.B., B.C. Cantab. Clin. Asst. Skin Dept.
- SEDGWICK, J. (1853). Boroughbridge, Yorks. M.D. St. And.
- SEDGWICK, L. W. (1847). 48, Gloucester Terrace, Hyde Park. M.D. St. And. 1848. Descriptive and Surgical Anatomy, Prize; Physiology and Anatomy, Prize; Midwifery, Prize; Surgery, Prize. 1849. Physiology, 1st Prize; Midwifery, 1st Prize; Surgery, Prize; Medicine, 1st Prize; General Proficiency, Treasurer's Medal.
- SEMON, F. 39, Wimpole Street, Cavendish Square. M.D. Berlin; F.R.C.P. Lond. Phys. for Dis. of Throat St. Thos. Hosp.
- SENIOR, E. W. (1886). Hamilton Villa, Herne Bay.
- SEON, G. E. (1877). Dellwood, Liebenwood Road, Reading.
- SERGEANT, E. (1867). County Offices, Preston, Lanc. L.S.Sc. 1870. 3rd Year Student, 3rd Coll. Prize; Cheselden Medal. H.S., R.A.
- SERS, C. H. (1868). 130, Queen's Rd., Peckham.
- SHACKEL, G. A. (1880). 8, Corve St., Ludlow, Salop.



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Demonstrator of Morbid Anatomy, and Res. Asst. Phys.; Radcliffe Travelling Fellow, Univ. Oxf.
- SHARP, W.** (1823). Horton House, Rugby, Warwk. (retired). M.D. Lambeth; F.R.S.
- SHATTOCK, S. G.** 4, Crescent Road, Wimbledon. F.R.C.S. Curator of Museum and Jt. Lect. on Pathology.
- SHAW, J.** (1874). Burlington House, Willoughby Road, Hampstead, and 12, Chandos St., Cavendish Square. M.D. Lond.  
w 1874-5. 1st Year Student, 1st Coll. Prize.  
s 1875. 1st Coll. Prize.  
w 1875-6. 2nd Year Student, 1st Coll. Prize.  
H.P., A.H.P., R.A.
- SHAW, W. H. C.** (1885). Normanton House, Normanton, Derby. M.A., M.B., B.C. Cantab.
- SHEARER, D. F.** (1886). Woodside, 39, Anerley Road, Upper Norwood. B.A., M.B., B.Ch. Oxon.; F.R.C.S. 1888. 2nd Year Student, Half 2nd Coll. Prize.  
H.P., H.S., A.H.S., Clin. Asst. Throat Dept.
- SHEPHEARD, J.** (1887). Cromer Rd., North Walsham, Norfolk. B.A. Cantab.
- SHEPHEARD, P. C.** (1859). Aylsham, Norfolk.
- SHEPHEARD, H.** (1887).
- SHEPHERD, H. B.** (1882). Goldielands, Settle, Yorks.
- SHEPHERD, F. J.** (1873). 152, Mansfield St., Montreal. M.D. McGill; Professor of Anatomy, McGill University; Senior Surgeon Montreal General Hospital.
- SHEPHERD, T. W.** (1873). Castle St. House, Launceston, Cornwall.
- SHEPPARD, W. J.** (1878). 211, Upper Richmond Road, Putney. M.D., M.S. Durh.  
w 1880-1. 3rd Year Student, 3rd Coll. Prize.  
w 1881-2. The Treasurer's Gold Medal.  
R.A., H.P., A.H.P., A.H.S.
- SHERRINGTON, C. S.** (1876). M.A., M.D., F.R.S. Prof. of Physiology, University College, Liverpool. Fellow of Gonville and Caius College, Cambridge. Physiological Society Hon. Sec.  
w 1882-3. 6th Year, Grainger Testimonial Prize.  
Lecturer on Physiology.
- SHIRRES, G.** (1880). Melbourne, Victoria, Australia. M.D., C.M., D.P.H. Aberd.
- SHIRTLIFF, E. D.** (1882). Holmwood, Cowleigh Road, Malvern, Worc.  
w 1882-3. 2nd Entrance Science Scholarship.
- SIDDALL, G. O.** (1853).
- SIDDALL, J. B.** (1860). (Travelling.) M.D., C.M. Aberd., D.P.H.
- SIMMONS, E. L.** (1856). St. Kilda, Victoria, Australia.
- SIMMONDS, H. M.** (1847). 66, Camberwell Road.
- SIMON, Sir John, K.C.B.** (1835). 40, Kensington Sq. F.R.C.S. (Hon.), F.R.S., Hon. M.D. et Chir. Munich, Hon. M.D. Dub., Hon. D.C.L. Oxon., Hon. LL.D. Cantab. et Edin. Cons. Surg. (formerly Surg. and Lect. on Path.) St. Thos. Hosp.
- SIMON, M. F.** (1865). Singapore, Straits Settlements. M.D. St. And.; L.D.S. Edin.  
1866. 1st Year Student, 1st Coll. Prize.  
1869. 3rd Year Student, 3rd Coll. Prize; Prosecutor's Prize; Prize and Hon. Cert. for Surgery and Surgical Anatomy.
- SIMPSON, C. B.** (1889).
- SIMPSON, H.** (1889). Market Weighton, East Yorks. B.A., M.B., B.C. Cantab.  
w 1889-90. 3rd Year Student, 3rd Coll. Prize.  
A.H.S., Clin. Asst. Ear Dept.
- SIMS, D.** (1888).
- SIMS, G. S.** (1880). The Hollies, Green Hill, Derby.  
s 1881. 1st Year Student, 3rd Coll. Prize.
- SIMS, J. H.** (1886). Whitchurch, Tavistock, Devon.
- SINCLAIR, D.** (1887). 6, East Park Terrace, Maryhill, Glasgow. M.B., C.M. Glasgow.
- SINGH, B. J.** (1888). Surg.-Capt. Bengal Army.

- Sissons, W. H. (1857). 3, Priestgate, Barton-on-Humber, Linc. J.P.  
 1855. Matriculation Examination—Physics, &c., Prize.  
 1859. Clinical Medicine, Prize;  
 Physical Society's Essay, Prize.  
 1860. 3rd Year Student, 2nd Coll. Prize;  
 Physical Society's Prize.  
 H.S.
- SKARDON, T. G. (1854). Brig.-Surg. I.M.S., Bengal. (Retired).
- SLATER, J. S. (1867). Evesham, Worc. J.P.  
 1868. 1st Year Student, 1st Coll. Prize.  
 1869. Physical Society's 2nd Year's Prize.  
 1870. 3rd Year Student, 2nd Coll. Prize;  
 Treasurer's Gold Medal.  
 H.P., R.A.
- SLAUGHTER, C. H. (1853). Insp.-Gen. R.N. (retired).
- SLAUGHTER, J. E. (1868).
- SLAUGHTER, W. B. (1866). Surg.-Lt.-Col. Army.
- SLIPPER, T. (1831). 30, St. Saviour's Road, W. Croydon, Surrey.
- SLOOOCK, R. (1889).
- SMART, W. H. (1882). Polesworth, Tamworth, Warwk. M.A., M.B. Cantab.
- SMITH, A. (1878). Dudley House, 255, Brixton Road.
- SMITH, C. C. (1873). Redditch, Worcester. B.A., M.B. Cantab. H.S., R.A.
- SMITH, C. J. (1856). 2, Medina Villas, Brighton.
- SMITH, E. (1888). Wallace Lodge, Balham High Road, Upper Tooting. M.D. Lond.  
 w 1887-9. 1st Year Student, 2nd Entrance Science Scholarship:  
 The William Tite Scholarship.  
 s 1889. 1st Year Student, 1st Coll. Prize.  
 w 1889-90. 2nd Year Student, 1st Coll. Prize.  
 w 1890-1. 3rd Year Student, 2nd Coll. Prize.  
 s 1891. 3rd Year Student, 2nd Coll. Prize;  
 Treasurer's Gold Medal.  
 H.S., A.H.S.
- SMITH, E. L. T. (1873). 138, High Street, Wandsworth.
- SMITH, F. J. P. (1881). 103, East St., Walworth.
- SMITH, F. W. (1863). 40, Newington Causeway.
- SMITH H. (1857). Blackrod, Chorley, Lanc.
- SMITH, H. E. (1887). Gleneagle House, Streatham. M.A., M.B., B.C. Cantab.
- SMITH, J. 23, Park Road, Plumstead, Kent.
- SMITH, J. B. (1881). Dulwich.
- SMITH, J. (1892). St. Thomas's Hospital. B.A., M.B., B.C. Cantab. A.H.S.
- SMITH, R. P. (1874). Res. Phys. and Med. Superint. Bethlem Royal Hosp. M.D., B.S., F.R.C.P.  
 s 1876. 2nd Year Student, 2nd Coll. Prize.  
 Res. Asst. Phys., H.P., A.H.P., H.S., A.H.S., Demonstr. of Pract. Phys.
- SMITH, S. L. (1870). 25, Argyle Square, King's Cross.
- SMITH, W. H. (1854). Cranmore, Royal St. West, Sandown, Isle of Wight.
- SMITH, W. H. (1877). Weston Lodge, Weston, Bath.
- SMYTH, H. J. (1882). South Molton, N. Devon.  
 w 1882-3. 1st Year Student, 3rd Coll. Prize.  
 s 1883. 1st Year Student, 1st Coll. Prize.  
 w 1883-4. 2nd Year Student, 1st Coll. Prize.  
 s 1884. 2nd Year Student, 2nd Coll. Prize.  
 w 1885-6. 4th Year Student, Treasurer's Gold Medal.  
 H.P., R.A., Clin. Asst. Skin Dept.
- SNAITH, F. (1861). 5, Pump Square, Boston, Linc.
- SNOAD, E. H. (1849). Aylestone Park, Leicester.
- SOLLY, E. (1882). Strathlea, Coldbath Road, Harrogate. M.B. Lond.; F.R.C.S.; D.P.H.  
 w 1883-4. 2nd Year Student, 2nd Coll. Prize.  
 w 1885-6. Solly Medal and Prize.  
 Surg. Registr., A.H.S., R.A., Clin. Asst. Skin and Ear Depts.
- SOLLY, R. V. (1883). 40, West Southernhay, Exeter. M.D., B.S. Lond.; F.R.C.S.  
 w 1884-5. 2nd Year Student, Half 2nd Coll. Prize.  
 H.S. A.H.S., Clin. Asst. Skin Dept.
- SOLLY, S. E. (1863). Colorado Springs, Colorado, U.S.A.  
 Med. Registr.
- SOUTH, R. E. E. (1882). Church Close, Boston, Linc.
- SOUTHERN, F. G. (1881). Pant-y-r-odin, Llandeibie, S. Wales.
- SOUTHERN, J. A. (1878). Friar Gate, Derby.
- SOWERBY, T. (1848). Welshpool, Montgomery.
- SPARKE, G. W. (1850). Mansfield Notts.

- SPALL, P. W. 1888. 1, Stanwick Road, West Kensington.
- SPEED, H. A. (1871).
- SPENCER, M. H. (1885). 4, Maxilla Gardens, North Kensington. M.A., M.D., B.C. Cantab.  
H.P. *Quinqu. Ass.*
- SPITIA, E. J. Ivy House, Clapham Common.
- SPRAKELING, R. J. (1854). 58, Merton Rd., Bootle, Liverpool. J.P.  
*1854. Can. Med. Prize.*
- SQUANCE, T. C. (1880). 15, Grange Crescent, Sunderland. M.D., M.S. Durh.; L.S.Sc. Phys. and Path. Sunderland Infirm.
- STABB, A. F. (1885). 5, Montpelier Terrace, Ilfracombe. M.B., B.C. Cantab.  
w 1885-6. 1st Year Student, 1st Entrance Science Scholarship :  
The William Tate Scholarship.  
s 1886. 1st Year Student, 2nd Coll. Prize.  
w 1886-7. 2nd Year Student, The Musgrave Scholarship.  
s 1887. 2nd Year Student, 1st Coll. Prize.  
w 1887-8. 3rd Year Student, 2nd Tenure of Musgrave Scholarship, with 1st Coll. Prize.  
w 1888-9. Treasurer's Gold Medal.  
H.S., A.H.S.
- STABB, E. C. 1882. 57, Queen Anne Street. F.R.C.S. Jun. Dem. of Anat. and Demonst. of Pract. Surg. Chief Asst. Throat Dept.  
w 1883-4. 2nd Year Student, Prosector's Prize.  
s 1884. 2nd Year Student, 1st Coll. Prize. Resident Assistant Surgeon, Surg. Regist., H.S., A.H.S., R.A., Clin. Asst. Throat and Ear Depts.
- STABB, F. A. (1885). St. John's, Newfoundland.
- STABB, W. W. (1888). Croft Lodge, Torquay. B.A., M.D., B.C. Cantab.  
w 1889-90. 4th Year Student, The Mead Medal.  
H.P.
- STABLEFORD, F. B. G. (1893). 114, Edmund Street, Birmingham.
- STACY, J. H. (1883). 39, Exchange Street, Norwich.
- STADDON, H. E. (1887). Surg.-Lt. Army.
- STADDON, J. R. (1880). 6, Silent St., Ipswich.  
A.H.P.
- STADDON, W. J. (1881). The Priory, St. Nicholas, Ipswich.
- STAINER, E. (1893). South Parkes Road, Oxford. B.A., M.B., B.Ch. Oxon.
- STALLARD, H. (1889). House Surg., Gen. Hosp., Newark-on-Trent. B.A. Cantab.
- STANFORTH, J. W. (1887). Hinderwell, Yorks.
- STARES, C. L. B. (1888).
- STARK, M. D. (1875). 6, Broad St., Oxford. M.D., C.M. Trin. Coll. Toronto.
- STARTIN, J. (1870). 15, Harley St., Cavendish Square.
- STATHAM, R. W. (1878). The Hall, Cheddar, Somerset.
- STAVELEY, W. H. C. (1881). 13, South Eaton Place. F.R.C.S.  
H.S., A.H.S., A.H.P., Clin. Asst. Ear Dept.
- STEDMAN, S. B. (1889). Fairfield, Gt. Bookham.
- STEEVES, G. W. (1880). 53, Parkfield Rd., Princes Pk., Liverpool. B.A. New Brunswick, M.D. Brux.
- STEPHENS, W. J. (1886). The Dispensary, Nottingham.
- STEVENSON, E. S. (1871). Strathallan House, Rondebosch, Cape Colony. F.R.C.S. Edin.
- STEWART, C. Royal College of Surgeons, Lincoln's Inn Fields. Prof. of Comp. Anat. and Phys., and Conserv. of Museum R.C.S. Eng. F.R.S.  
Curator of Museum and Lecturer on Physiology and Comparative Anatomy.
- STEWART, C. H. (1888). Witheridge, North Devon.
- STILES, H. T. (1851). Spalding, Linc. M.D. St. And.; J.P.
- STILWELL, G. R. F. 1886. 14, Southend Rd., Beckenham, Kent. M.B. Lond.  
H.P.
- STOCKS, F. (1863). 421, Wandsworth Road. R.A.
- STOKER, G. (1880). 14, Hertford St., Mayfair, and Dunloe Castle, Killarney, Co. Kerry. M.R.C.P., J.P.
- STOKES, W. (1856). Buckingham House, 51, Foster Hill Road, Bedford (retired).
- STOKES, W. (1888). 1, Bailey Street, Ton Pentre, Rhondda, Glamorg. M.B. Lond.
- STONE, F. W. S. (1878). 50, Kempshott Rd., Streatham Common. H.P.

- STONE, W. G. (1880). Grange-field, Onton, Cheshire. M.A., M.B., B.Ch. Oxon. F.R.C.S. H.S., A.H.S.
- STRANGE, R. G. (1890). 2, Belsize Avenue. Clin. Asst. Ear Dept.
- STRANGE, W. H. (1861). 2, Belsize Av., Hampstead, and 5, Grosvenor St. M.D., C.M. Aberd.
- STRIDE, J. (1861). Waratah, New-castle, New South Wales.
- STRONG, G. The Chase, Ross, Herefordsh. M.D. Edin.
- STUART, J. B. Mere Oaks, Standish, Wigan. F.R.C.S. Edin., J.P.
- STUART, T. E. (1882). 30, West Street, Harwich, Essex.
- STURDEE, F. H. (1891). 19, High-bury Place.
- SUGDEN, E. S. (1880). 77, Walton Vale, Aintree, Liverpool. M.D. Durh.
- SULLIVAN, E. H. C. (1880). 53, Bath Street, St. Helier, Jersey.
- SUMMERHAYES, H. (1860). Wanderer's Club, Pall Mall.  
1861. Matriculation Examination—Classics and Mathematics, President's Prize; Modern Languages, &c., Coll. Prize; Physics and Natural History, Coll. Prize;  
The William Tite Scholarship.  
1862. 2nd Year Tite's Scholarship.  
1863. 3rd Year Tite's Scholarship; Treasurer's Gold Medal.  
H.S., R.A., Surg. Registrar.
- SUMMERHAYES, W. (1855). Brightling Mount, Burwash, Sussex. M.D. Durh.  
1856. Matriculation Examination—Modern Languages, Prize.
- SUTCLIFF, E. H. (1891). M.B., B.S. Durh.
- SUTCLIFF, E. (1860). Gt. Torrington, Devon. M.D., C.M. Aberd. Mem. Gen. Counc. Univ. Aberd.  
1861. 1st Year, 3rd Coll. Prize;  
1863. 3rd Year Student, 3rd Coll. Prize.
- SUTCLIFF, J. H. (1851). Farfield House, Ripley, Surrey (retired).
- SUTCLIFFE, J. (1867). Ashbourne House, 625, Wandsworth Rd.  
1869. Prosector's Prize.
- SUTCLIFFE, W. G. (1888). F.R.C.S. w 1888-9. 1st Year Student, 1st Coll. Prize.  
s 1889. 1st Year Student, 2nd Coll. Prize.  
w 1889-90. 2nd Year Student, 2nd Coll. Prize.  
w 1891-2. 4th Year Student, The Cheselden Medal.  
H.S., A.H.S.
- SUTTER, R. R. (1892). 410, Brixton Road. M.B., C.M. Aberd.
- SUTTON, Rev. F. W. (1875). St. Barnabas Mission, Umtata, Pondoland, Cape Colony.
- SUTTON, H. M. (1878). Bagdad, Turkey-in-Asia.
- SUTTON, S. W. (1875). Quetta, Afghanistan. M.D., B.S. Lond.  
H.P., A.H.S., A.H.P., R.A.
- SUZUKI, S. (1886). Tokio, Japan.
- SWALE, H. (1875). M.B. Lond.  
A.H.P., A.H.S.
- SWALLOW, A. J. (1885). 5, Mount Edgumbe Gdns., Clapham Rise. M.B., B.S. Durh.  
Clin. Asst. Skin Dept.
- SWALLOW, J. D. (1859). Clifton Lodge, Clarence Rd., Clapham Park. M.D. St. And.
- SWEET, J. L. (1838). Tenbury, Worc.
- SWEETAPPLE, H. A. (1888). Adelaide, S. Australia. M.D., B.S. Durh.
- SWINDELLS, E. (1886). 23, Broadway, Barking.
- SWINHOE, A. C. (1890). Park House, New Swindon, Wilts.
- SWINHOE, G. R. (1887). New Swindon, Wilts.
- SYMONS, R. FOX (1888). 34, Christ church Road, Streatham  
H.S., A.H.S.
- TAKAKI, K. (1875). Tokio, Japan. F.R.C.S., Director-General of the Medical Department Imperial Japanese Navy, Surgeon to the Tokio General Hospital.  
w 1875-6. 1st Year Student, 3rd Coll. Prize.  
s 1876. 2nd Coll. Prize.  
w 1876-7. 2nd Year Student, 1st Coll. Prize.  
s 1877. 2nd Year Student, 3rd Coll. Prize.  
w 1877-8. 3rd Year Student, 2nd Coll. Prize.  
w 1878-9. 4th Year Student;  
The Cheselden Medal;  
The Treasurer's Gold Medal.  
H.S., R.A., A.H.P.
- TAKAYASU, M. (1890). Tokio, Japan.  
w 1892-3. 2nd Year Student, The Musgrove Scholarship.  
s 1893. 2nd Year Student,  $\frac{1}{2}$  1st and 2nd Coll. Prizes.  
w 1893-4. 3rd Year Student, and tenure of Musgrove Scholarship.
- TANNER, H. (1895). Hartington House, Devonshire Road, South Lambeth. F.R.C.S.
- TANNER, M. B. (1857). M.D.R.U.I., M.D. St. And.



- TAKKIEWILL, J. (1843). Sturminster Newton, Blandford, Dorset. (retired).
- TATE, W. W. H. 57, Queen Anne St., Cavendish Square. M.D. Lond., M.R.C.P. Asst. Obst. Phys. Obst. Tutor and Registrar St. Thos. Hosp.
- TATHAM, E. (1873). 102, Glenthorne Road, Hammersmith.
- TAYLOR, D. (1878). Hyla Kandy, Cachar, Bengal. M.D., R.U.I.
- TAYLOR, F. P. (1865). St. John, New Brunswick, Canada.
- TAYLOR, G. E. O. (1891). St. Thos. Hospital. Clin. Asst. Skin Dept.
- TAYLOR, S. (1869). 16, Seymour St., Portman Square. M.D., C.M. Aberd., M.R.C.P. Assistant Physician West London Hospital. Demonstrator of Anatomy.
- TAYLOR, S. J. (1874). 44, Prince of Wales Road, Norwich. M.B., C.M. Edin.  
w 1875-6. 2nd Year Student, The Musgrove Scholarship.  
w 1876-7. 3rd Year Student, 2nd Year Musgrove Scholarship, and 1st Coll. Prize.  
w 1877-8. The Mead Medal; The Treasurer's Gold Medal.
- TEALE, M. A. (1889). 38, Cookridge Street, Leeds. 1894. Solly Medal and Prize.
- TEBB, W. S. (1883). Charlcombe, Boscombe Hill, Bournemouth. M.A., M.D. Cantab., D.P.H. Clin. Asst. Throat Dept.
- TEBBS, L. V. (1887). 5, London St., New Swindon.
- TERRY, J. (1884). Sen. House Surg. Roy. Surrey Co. Hosp., Guildford.
- THOMAS, D. E. (1873). Eastfields, Chepstow Road, Newport, Mon.
- THOMAS, J. T. (1882). Roslyn, Camborne, Cornwall.
- THOMAS, J. W. (1876). South Villas, Neath, Glamorg.
- THOMAS, P. C. (1884). Sea Point, Cape Town.
- THOMAS, R. W. (1867). Temple Villa, Rye Lane, Peckham.
- THOMPSON, C. H. (1879). Jun. Constitutional Club, Piccadilly. M.A., M.D. Dub., M.R.C.P., D.P.H.
- THOMPSON, F. H. (1868). Cleobury Mortimer, Salop. 1870. Prosector's Prize.
- THOMPSON, G. W. (1890). 13, Valley Bridge Parade, Scarborough. B.A., M.B., B.C. Cantab. H.P., H.S.
- THOMSON, G. J. C. (1873). 111, Sinclair Road, West Kensington Park. M.D. Durh.
- THORNELEY, W. (1891). St. Thomas's Hospital. B.A., M.B., B.C. Cantab. Clin. Asst. Throat Dept.
- THORNTON, A. C. (1885). King Charles Road, Surbiton.
- THORNTON, F. B. (1891). St. Thos. Hospital. w 1894-5. 4th Year Student, The Mead Medal. H.P.
- THORNTON, H. J. (1873).
- THORP, A. E. (1889). 449, Lordship Lane, Dulwich.
- THUDICHUM, J. L. W. (1878). 11, Pembroke Gdns., Kensington. M.D. Giessen, F.R.C.P. Lect. on Path. Chem.
- THURNAM, W. R. (1886). Sen. Med. Off. Bethnall House Asylum, Cambridge Road. M.B., B.S. Durh.
- THURNELL, H. L. (1889).
- THURSTAN, E. P. (1874). 60, Herne Hill. M.D. Cantab.
- THURSTON, E. O. (1890). 27, Panton St., Haymarket. s 1892. 2nd Year Student, Half 1st and 2nd Coll. Prizes. w 1892-3. 3rd Year Student, Half 3rd Coll. Prize. w 1893-4. 4th Year Student, Cheselden Medal. H.S., A.H.S.
- TIMOTHY, P. V. (1848). 1851. Practical Midwifery, Prize.
- TIMS, H. W. M. (1889). 59, St. George's Square, Pimlico. M.D., C.M. Edin. Lect. on Biol. and Comp. Anat. Westm. Hosp. Med. Sch.
- TINLEY, W. E. F. (1891). Hildegard House, Whitby, Yorks. M.B., B.S. Durh. w 1891-2. 2nd Year Student, 1st Coll. Prize. s 1892. 2nd Year Student, Half 1st and 2nd Coll. Prizes. w 1892-3. 3rd Year Student, Half 3rd Coll. Prize. s 1893 3rd Year Student, 2nd Coll. Prize. Obstet. H.P.
- TODD, F. (1879). Sunnyside, Croydon Road, Beckenham. L.D.S., Dent. Surg. Roy. Free Hosp.
- TODD, H. J. McC. (1872). Staff Surg. R.N.
- TOLLER, N. P. F. (1885).

- TOLLER, S. G. (1885).** St. Thomas's Hospital. M.D. Lond., M.R.C.P., Res. Asst. Phys.  
w 1885-6. 1st Year Student, 2nd Entrance Science Scholarship.  
s 1886. 1st Year Student, 1st Coll. Prize.  
w 1886-7. 2nd Year Student, Half 1st and 2nd Coll. Prizes.  
w 1887-8. 3rd Year Student, 2nd Coll. Prize.  
w 1888-9. 4th Year Student, The Mead Medal.  
Med. Regist. and Demonstr. of Pract. Med., H.P., H.S., A.H.S., Jun. and Sen. Ophth. H.S., Clin. Asst. Throat and Ear Depts.
- TOMPSETT, R. H. (1884).** Mercefield House, Crewkerne, Somers.
- TOMSON, W. B. (1879).** Park Street West, Luton, Beds. M.D. Durh.  
w 1879-80. 1st Year Student, 2nd Coll. Prize.  
s 1880. 1st Year Student, 2nd Coll. Prize.  
w 1880-1. 2nd Year Student, The Musgrove Scholarship, Prosector's Prize.  
w 1881-2. 3rd Year Student, 2nd Coll. Prize; 2nd Tenure of Musgrove Scholarship.  
s 1882. 2nd Coll. Prize.  
w 1882-3. Treasurer's Gold Medal.  
A.H.P.
- TONKING, J. H. (1882).** Chapel St., Camborne, Cornwall. M.B. Lond.  
w 1884-5. 3rd Year Student, Half 2nd and 3rd Coll. Prizes.  
w 1885-6. 4th Year Student, The Cheselden Medal.  
H.S., A.H.S., Clin. Asst. Ear Dept.
- TOOMBS, H. G. (1889).** St. Thomas's Hospital.  
Ophth. H.S., Clin. Asst. Skin Dept.
- TOPPING, J. P. (1879).** Clarence House, Teddington, Middlx. M.B., C.M. Glasg.
- TOTSUKA, K. (1881).** Tokyo, Japan. Deputy Inspector General of Hospitals, Imperial Japanese Navy. F.R.C.S.  
s 1882. 1st Year Student, 2nd Coll. Prize.  
w 1882-3. 2nd Year Student, Half Musgrove Scholarship and 1st Coll. Prize combined.  
w 1883-4. 3rd Year Student, 2nd Tenure of Half Musgrove Scholarship, with 3rd Coll. Prize.  
A.H.S.
- TOWNSEND, M. (1865).** 24, Upper Phillimore Place, Kensington.
- TREADWELL, O. F. N. (1878).** Med. Off. H.M. Conv. Prison, Borstal, Kent.
- TREDINNICK, E. (1871).** Penlu House, Craven Arms, Salop.
- TREVES, E. (1866).** 2, The Drive, Hove, Brighton.
- TREVES, W. K. (1862).** 31, Dalby Square, Margate. F.R.C.S.  
1863. Modern Languages and Modern History, Coll. Prize.  
1865. 3rd Year Student, 2nd Coll. Prize; Prosector's Prize.  
H.S.
- TREVITHICK, E. G. (1886).** 24, Promenade, Cheltenham. M.A., M.D., B.C. Cantab.
- TREVOR, H. O. (1877).** Surg.-Maj. Army.
- TRIBE, A. G. (1888).**
- TRUMAN, C. E. (1871).** 23, Old Burlington Street. M.A. Cantab.; L.D.S., Dent. Surg. St. Thos. Hosp., Surg. Dent. Hosp. Lond.
- TURLE, A. (1870).** Chipping Norton, Oxon.
- TURNER, F. C. 15, Finsbury Square.** M.A., M.D. Cantab.; F.R.C.P., Phys. and Demonstr. of Path. Anat. Lond. Hosp. Res. Asst. Phys.
- TURNER, J. G. (1886).** 12, George Street, Hanover Square. F.R.C.S., L.D.S.
- TURNER, R. (1852).** Lewes, Sussex.
- TURNER, H. G. (1884).** 68, Portland Place. M.A., M.B., B.Ch. Oxon.; M.R.C.P., F.R.C.S., Asst. Phys., Physn. to Electrical Dept., Demonstrator of Morbid Anatomy. Teacher of Pract. Med., St. Thomas's Hospital.  
w 1885-6. 2nd Year Student, 2nd Coll. Prize.  
s 1886. 2nd Year Student, 2nd Coll. Prize.  
w 1886-7. 3rd Year Student, 3rd Coll. Prize.  
s 1887. 3rd Year Student, 1st Coll. Prize.  
w 1887-8. The Mead Medal.  
Res. Asst. Phys., H.S., H.P., Demonstrator of Morbid Histology.
- TYRRELL, W. (1872).** 104, Cromwell Road, South Kensington. Sen. Anaesthetist St. Thos. Hosp. Tel.: "Tyrrell, London."  
H.P., A.H.P., R.A.
- TYRRELL, W. (1850).** Claremont, Gt. Malvern, and 2, Albert Mansions, Victoria Street, London.  
1853. Ophthalmic Essay, Mr. Dixon's Prize.  
1854. Surgical Reports, President's Prize.  
H.S.
- TYRRELL, W. G. B. (1878).** Claremont, Great Malvern. D.P.H.
- UMNEY, W. F. (1885).** Heather Bell, 15, Crystal Palace Park Road, Sydenham. M.D. Lond.  
w 1887-8. 2nd Year Student, 1st Coll. Prize.  
H.P., Jun. and Sen. Obst. H.P., Clin. Asst. Skin Dept.
- USHER, C. H. (1888).** 3, Bon Accord Square, Aberdeen. B.A., M.B., B.C. Cantab.; F.R.C.S. Edin.  
Ophth. H.S., Clin. Asst. Throat Dept.

- USHER, I. S. (1855). Carlton House, Yeadon, Leeds. M.D. St. And.
- VALLANCEY, A. d'E. de. (1881). Willoughby House, Ravenscroft Park.
- VARDY, J. L. (1852). 72 and 74, Commercial Road, Portsmouth, and Portchester, Hants.  
1853. Practical Midwifery, Prize.
- VERDON, E. S. (1886). B.A., M.B., B.C. Cantab.
- VERDON, W. (1870). 47, Brixton Hill. M.D. Brux.; F.R.C.S. Eng.  
Med. Regist., H.S. Asst. Demonstr. of Anat.
- VICKERS, K. B. J. (1887). Redgate Hall, Wolsingham, Darlington.
- VIVIAN, G. E. (1876). Staindrop, Darlington, Durham.
- VIVIAN, J. H. P. (1884). 12, West Kensington Mansions.
- VORES, A. (1874). 49, Grange Park, Ealing.
- WADD, F. J. (1861). Prospect House, Richmond, Surrey. M.B., C.M. Aberd., Surg. H.R.H. the Princess Mary Adelaide and H.S.H. the Duke of Teck, Surg. Richmond Hospital. R.A.
- WADD, H. R. (1887). Prospect House, Richmond, Surrey.
- WADES, J. W. B. Sidney, New South Wales. M.D., N.Y.; M.D. Aberd.
- WADIA, D. R. (1880). 49, Sopori Bang Road, Parel, Bombay.
- WAGSTAFFE, W. W. (1861). Purleigh, St. John's Hill, Sevenoaks, Kent. B.A. Lond., F.R.C.S.  
1862. Matriculation Examination—Classics and Mathematics, President's Prize. Physics and Natural History, Coll. Prize;  
Modern Languages, &c., Coll. Prize;  
1st Year Student, Treasurer's Prize.  
1863. 2nd Year Student, 1st Coll. Prize.  
1864. 3rd Year Student, 1st Coll. Prize;  
Physical Society's 3rd Year's Prize;  
Cheselden Medal;  
Treasurer's Gold Medal.  
Sen. Asst. Surg., Lect. on Anat. and Res. Asst. Surg. St. Thos. Hosp., Mem. Board of Exam. R.C.S.E., Exam. in Art. Apoth. Hall, and Med. Insp. H.M. Privy Council.
- WAINWRIGHT, A. S. R. (1878). Pembury Lodge, Tottenham, Middlesex.
- WAINWRIGHT, W. L. (1886). Brixworth, Northampton. M.B., B.S. Lond.  
H.S., A.H.S., Sen. and Jun. Obst. H.P.
- WAITES, R. F. (1885). East Bank, Rotherham. Lect. on Hygiene Rotherham Sch. of Sci.
- WAKEFIELD, M. J. (1884). 47, Christchurch Rd., Doncaster. M.B. Durh.
- WAKLEY, T., Jun. (1875). 5, Queen's Gate. Joint Editor of *The Lancet*.
- WALCOTT, R. B. (1839). Barbados, W. Indies. M.D. Lond., F.R.C.S.
- WALKER, A. W. H. (1886). Argyle House, Station Parade, Harrogate. M.D. Brux.
- WALKER, R. F. (1883). Vale Cottage, Esher, Surrey.
- WALKER, Robt. (1853). Budleigh-Salterton, Devon. M.D. St. And.
- WALKER, W. W. (1890). 33, West Gate, Peterborough. B.A., M.B., B.C. Cantab.
- WALLACE, A. C. (1876). 30, Saumarez Street, Guernsey.
- WALLACE, C. S. (1886). Wey Springs, Haslemere, Surrey. M.B., B.S. Lond., F.R.C.S., Surg. Registrar.  
w 1887-8. 1st Year Student, Half 2nd Coll. Prize.  
s 1888. 1st Year Student, 2nd Coll. Prize.  
w 1888-9. 2nd Year Student, 1st Coll. Prize.  
w 1889-90. 3rd Year Student, 2nd Coll. Prize.  
H.S., A.H.S., Sen. and Jun. Obst. H.P., Clin. Asst. Ear Dep't.
- WALLACE, F. G. (1887). 50, Earl's Court Road. M.A., M.B., B.C. Cantab.  
Non-Res. H.P.
- WALLACE, J. Carshalton, Surrey (retired).
- WALLACE, L. A. R. (1891). 24, Norfolk Crescent, Hyde Park. B.A., M.B. Oxon.  
H.S., A.H.S., Clin. Asst. Ear & Skin Depts.
- WALLER, A. W. (1883). 31, London Road, Stroud, Gloucester. D.P.H.
- WALLER, W. B. 153, Seven Sisters Road, Holloway.
- WALLFORD, W. Brome-Walton, 61, Appach Rd., Josephine Avenue, Brixton Hill.
- WALMSLEY, H. (1863). Moss Cottage, Fylde Rd., Preston, Lanc.
- WALTER, E. C. (1886). Market Place, Wallingford.
- WALTERS, F. R. (1875). 60, Welbeck Street, and Ferndale, Fairfield Road, Croydon. M.D., B.S. Lond.; M.R.C.P., F.R.C.S., Phys. N. Lond. Consump. Hosp. and City Disp. A.H.P., A.H.S.

- WARD, F. H. 1862. 8, Lyndhurst Villas, The Park, Ealing.  
1863. 1st Year Student, Treasurer's Prize.  
1864. 2nd Year Student, 1st Coll. Prize;  
Physical Society's 2nd Year's Prize.  
1865. 3rd Year Student, 1st Coll. Prize;  
Physical Society's 3rd Year's Prize;  
Cheselden Medal;  
Treasurer's Gold Medal.
- WARD, W. F. (1882). Bawtry, Yorks.
- WARD, W. T. (1876). Stanhope, Canada. M.D., C.M. Montreal.
- WARE, E. E. (1884). 143, Haverstock Hill. M.D., B.S. Lond.  
H.S., A.H.S.
- WARE, H. S. (1889). B.A., M.B., B.C. Cantab.
- WARREN, S. (1881). Kensington, Adelaide, S. Australia.
- WARRENER, R. (1850). Morborne, Peterborough. M.A. Cantab.
- WARNER, A. (1891).
- WATERS, F. W. (1888). Coningsby, Lincolnshire.
- WATERS, H. G. (1887). 3, Lysias Rd., Clapham Common.
- WATERWORTH, E. A. (1865). 40, Quay St., Newport, I.W. M.D. Aberd.
- WATKINS-PITCHFORD, W. (1887). St. Jude's Vicarage, St. George's Road, Southwark. M.B. Lond.  
H.P.
- WAY, F. W. (1852). Elm Grove, Southsea.
- WAY, J. H. F. (1886). 45, Fawcett Road, Southsea.
- WAY, J. P. (1860). Mile End Villa, Landport.  
R.A.
- WEARY, G. E. (1884). 67, Palmerston Road, Boscombe, Bournemouth.
- WEBB, F. (1890). Nelson Place, Newcastle-under-Lyme.
- WEBBER, W. W. (1876). Crewkerne, Somerset.  
w 1876-7. 1st Year Student, 3rd Coll. Prize.
- WEBSTER, E. (1883). 32, Richmond Place, Brighton.  
w 1883-4. 1st Year Student, 1st Coll. Prize.  
s 1885. 2nd Year Student, Half 2nd Coll. Prize.
- WEBSTER, J. H. Whittlesea, Cambs.
- WEBSTER, M. H. 1858. Grafton, New South Wales.
- WEEKES, F. H. (1873). 16, Gillygate, York. F.R.C.S.  
w 1873-4. 1st Year Student, 3rd Coll. Prize.  
s 1874. 3rd Coll. Prize.  
w 1874-5. 2nd Coll. Student, 2nd Coll. Prize.  
s 1875. 3rd Coll. Prize.  
w 1875-6. 3rd Year Student, 3rd Coll. Prize.  
H.S., R.A.
- WELCH, C. H. (1859). 46, Upp. Rock Gdns., Brighton.
- WELCH, R. W. F. (1881). 61, Oxford Street, Southampton.
- WELCHMAN, E. (1869). Heckington, Lincs.  
H.S., H.P.
- WELLS, A. E. (1877). Cuckfield, Sussex. M.D. Lond.  
w 1877-8. 1st Year Student, 2nd Entrance Science Scholarship.  
H.P., A.H.P., H.S., A.H.S., R.A.
- WELLS, Sir Spencer, Bart. (1839). 3, Upper Grosvenor Street. F.R.C.S. Eng. (Hon.), Pres. 1883, F.R.C.P.I. (Hon.), F.R.C.S.I. (Hon.), M.D. (Hon.) Dub., Leyden, Charkof, and Bologna; Surg. to the Queen's Household, Cons. Surg. Samarit. Hosp. for Wom. and Child.
- WELSFORD, G. F. (1880). Gotham House, Tiverton, Devon. B.A., M.B. Cantab.
- WEST, C. J. (1879). The Grove, Fulbeck, Grantham.
- WEST, R. H. (1870). 10, Station Road, Taunton. M.A. Cantab.
- WESTON, G. H. (1882). Forest Lodge, Shirley, Hants. M.B., D.P.H. Cantab.
- WHEATON, S. W. (1882). 76, The Chase, Clapham Common. M.D. Lond., M.R.C.P., D.P.H., Physician to the Royal Hospital for Children and Women, and to the Surrey Dispensary. Med. Insp. Local Govt. Board.  
s 1885. 3rd Year Student, Half 1st and 2nd Coll. Prize.  
w 1885-6. 4th Year Student, The Mead Medal.  
H.P., R.A., Demonstr. of Physics.
- WHEELER, C. (1854). 96, Kennington Park Road.
- WHEELER, P. C. E. D'Erf. (1883). English Hospital, Jerusalem. M.D. Brux., F.R.C.S. Edin.
- WHEELER, M. (1892).
- WHELFTON, E. S. 1881. Gonville House, Beckenham Rd., Beckenham. M.A. Cantab.
- WHERRY, G. E. (1869). Corpus Bldgs., Cambridge. M.A., M.B., M.C. Cantab., F.R.C.S., Surg. Addenb. Hosp., Lect. on Surg. Univ. Camb. Asst. Demonstr. of Anat.
- WHICHELLO, E. (1892). 44, Trumington Street, Cambridge. B.A., M.B., B.C. Cantab.
- WHICHELLO, H. (1888). The Mount, Tattenhall, Cheshire.



- WHISHAW, R. R. (1883). Larkstone, Birdhurst Road, South Croydon. B.A., M.B., B.C. Cantab., F.R.C.S., Surg. Croydon Hosp.
- WHISTLER, Rev. C. W. (1875). Stockland Vicarage, Bridgwater, Somers.
- WHISTON, P. H. (1882). Surg. Capt. Army. D.P.H.
- WHITAKER, S. M. (1886). India.
- WHITE, C. H. (1872). 4, East Circus St., Park Row, Nottingham. R.A.
- WHITE, E. F. (1876). Westlands, 280, Upper Richmond Road, Putney. F.R.C.S., Anæsthetist St. Thomas's Hosp. Tel.: "Inhaler, London." H.P., H.S., A.H.S.
- WHITE, M. (1888). Burma Road, Stoke Newington.
- WHITEHEAD, E. T. (1886). Camperdown House, 118, Lavender Hill. w 1886-7. 1st Year Student, 2nd Coll. Prize. s 1888. 2nd Year Student, Half 2nd Coll. Prize.
- WHITEHEAD, J. L. (1860). Belgrave House, Ventnor, Isle of Wight. M.D. St. And.; M.R.C.P., Cons. Phys. Isle of Wight Co. Hosp. H.S.
- WHITMARSH, R. P. H. (1889). 7, St. Michael's Place, Brighton.
- WICKHAM, G. H. (1885). Fleet, Hants. M.B., B.C. Cantab. H.P., Clin. Asst. Ear Dept.
- WIGHAM, W. H. (1884). Murivance House, Shrewsbury.
- WIGHTMAN, H. T. (1888). 70, Clark-grove Rd., Sheffield.
- WIGLESWORTH, J. (1878). Med. Superint. Co. Asyl. Rainhill, Lanc. M.D. Lond.; M.R.C.P., Lect. on Ment. Dis. Univ. Coll. Liverpool, Exam. in Ment. Dis. Victoria Univ.
- WILDE, L. (1883). Palace Chambers, Westminster. M.D. Durh.; M.R.C.P. Lond.; D.P.H.; Med. Off. Health Bedfordshire County Council. Physician Croydon Boro' Hosp.
- WILES, J. (1848). Dep. Surg.-Gen. Army (retired).
- WILKINS, G. H. (1872). 134, Brixton Road. M.D. Durh.
- WILKINSON, C. J. (1879). Leh House, Osborne Road, Windsor.
- WILKS, G. A. F. Stanbury, Torquay (retired). M.D. Edin.; M.R.C.P. Lect. on Mat. Med.
- WILLIAMS, A. H. (1869). Surg.-Lt.-Col. Bengal Army. M.B., C.M. Aberd.
- WILLIAMS, A. W. (1891). 4, Cumberland Gate, Richmond Road, Kew. M.B., C.M. Edin., D.P.H.
- WILLIAMS, C. J. (1874). Brookside, Woodhall Spa, Linc.
- WILLIAMS, D. C. L. (1883). 3, St. John's Terrace, Pendre, Brecon.
- WILLIAMS, F. N. (1879). 181, High Street, Brentford.
- WILLIAMS, G. C. W. (1884). Dunstaffnage, 99, Wickham Rd., Brockley.
- WILLIAMS, G. F. C. (1874). Balcarres, 4, Brixton Hill.
- WILLIAMS, H. (1867). Moor Park, Harrogate, Yorks. (not in practice). J.P.  
1868. 1st Year Student, 2nd Coll. Prize.  
1869. 2nd Year Student, 3rd Coll. Prize.  
H.S.
- WILLIAMS, H. B. (1886). 78, Lewisham High Road. M.D. Brux.
- WILLIAMS, J. (1857). Swinton, Manchester. M.D. St. And.  
1839. Clinical Medicine, Prize.
- WILLIAMS, L. L. B. (1885). Sidmouth, Devon. M.B., C.M. Glasg.
- WILLIAMS, P. M. G. (1852). Parrag House, Newport, Pembroke.  
1854. Practical Midwifery, Prize.
- WILLIAMS, R. B. (1886). Aston Clinton Rectory, Tring.
- WILLIAMS, R. M. (1879). 95, St. Mark's Rd., North Kensington. M.D. Lond.  
w 1879-80. 1st Entrance Science Scholarship.  
H.P., A.H.P.
- WILLIS, C. F. (1871). Surg.-Maj. Bombay Army. M.D. Durh., M.R.C.P.
- WILLOCK, E. H. (1886). 113, London Road, Croydon.
- WILLSON, H. S. (1890). Station Rd., Byfleet, and Weybridge, Surrey. B.A. M.B., B.C. Cantab.
- WILSON, A. (1880). 4, Coburg Terr., Anlaby Road, Hull.
- WILSON, A. M. (1884). 1, Mill St., Cape Town. M.D., B.S. Durh.
- WILSON, S. (1880). 262, Oldham Rd., Rochdale.

- WINDLEY, W. (1882). Colston-Bassett, Bingham, Notts. M.A. Cantab.
- WINDSOR, C. W. (1891). Seamen's Hospital, Greenwich. M.A., M.B., B.C. Cantab.  
H.P.
- WINDSOR, T. (1853). The Polygon, Ardwick, Manchester (retired).
- WINFIELD-ROLL, G. (1884). 126, London Road, Leicester. B.A., M.B., B.C. Cantab.  
Ophth. H.S.
- WINSTON, W. B. (1887). Cleveland House, Bounds Green Road, Bowes Park. B.Sc. Lond.  
w 1887-8. 1st Year Student, 2nd Entrance Science Scholarship.  
w 1888-9. 2nd Year Student, 2nd Coll. Prize.  
s 1889. 2nd Year Student, 1st Coll. Prize.  
w 1891-2. Solly Medal and Prize.  
Demonstr. of Physiology. Clin. Asst. Skin Dept.
- WINTERBOTTOM, H. (1844). 148, Liverpool Road, Birkdale, Southport, Lancs. Cons. Surg. St. Mary's Hospital, Manch.
- WINTERBURN, J. W. (1879). Elm Cottage, Durnsford Road, Wimbeldon Park.
- WISHART, J. (1876). London, Ontario, Canada. F.R.C.S. Edin.
- WOAKES, A. B. (1880). 78, Harley Street. Surg. Lond. Throat Hosp.
- WOAKES, E. (1854). 78, Harley St., Cavendish Square. M.D. Lond. Sen. Aur. Surg. Lond. Hosp., Lect. on Aur. Surg. Lond. Hosp. Med. Sch., Surg. Lond. Throat Hosp.  
1857. 2nd Year Student, 2nd Prize; Clinical Medicine, Prize.  
1858. Essay on Neuralgia, Mr. N. Smith's Prize;  
Surgery and Surgical Anatomy, Cheselden Medal.  
H.S.
- WOLFF, A. (1870). 4, Ilchester Gdns., Prince's Square, Bayswater.
- WOOD, E. J. (1874). Yalding, Maidstone, Kent. B.A., M.B. Cantab.
- WOOD, J. (1884). The Gables, The Common, Cranleigh, Surrey.
- WOOD, R. (1841). Driffield, Yorks. and The Red House, Robin Hood's Bay. M.D. St. And., J.P.
- WOODHOUSE, T. J. (1854). 11, The Hill, Putney. M.D. Lond., F.R.C.S.
- WOODHOUSE, T. P. (1874). Surg.-Maj. Army.
- WOODMAN, W. E. (1874). Oxford Lodge, Croydon. M.D. Durh.  
s 1875. 1st Year Student, 2nd Coll. Prize.
- WOODWARD, C. R. M. (1886). Listolhan, Toowoomba, Queensland.
- WORTH, E. H. (1888). 65, Selhurst Road, S. Norwood.
- WORTHINGTON, G. F. J. (1856). Thorncliffe, Poole Rd., Bournemouth. M.R.C.P.I.
- WRENCH, E. B. (1887). The Wood house, Bath St., Bakewell, Derby. M.B., B.C. Cantab.
- WRENCH, E. M. (1850). Park Lodge, Baslow, and Bakewell, Derbyshire. F.R.C.S.  
1851. Physical Society's Essay, Treasurer's 1st Year's Prize.  
Asst. R.A.
- WRIDE, F. G. (1867). Warrnambool, Victoria, Australia.
- WRIGHT, A. (1858). The Lodge, Romford, Essex.
- WRIGHT, E. H. (1882). Surg.-Capt. Madras Army.  
s 1885. 2nd Year Student, Half 2nd Coll. Prize.
- WRIGHT, S. F. (1884). Eltham Road, Lee, Kent. M.D. Lond.
- WRINCH, E. P. (1888). Hill Crest, Ipswich. M.B., B.S. Durh.
- WROUGHTON, W. C. H. (1885). Comer Lodge, 33, De Pary's Av., Bedford.
- WYMAN, C. (1886). Red Brae, 18, Putney Hill. M.A., M.D., B.C. Cantab.; F.R.C.S.  
w 1889-90. Solly Medal and Prize.  
H.P., H.S., A.H.S.
- WYMAN, W. S. (1851). Red Brae, 18, Putney Hill. M.D. St. And., F.R.C.S.  
1852. Matriculation Examination, Scholarship.
- WYSARD, A. T. (1887). Malabar, Alleyne Road, West Dulwich.
- YEOMAN, C. (1883). Kipping House, Thornton, Bradford, Yorks. B.A., M.B., B.C. Cantab.  
R.A.
- YEOMAN, S. (1885). Clark's Hill, Prestwich, Manchester. B.A., M.B., B.C. Cantab.
- ZEIDAN, Selim. (1886).



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